Vol. 8, No. 5

AV Communication Review

AUDIO VISUAL

The Education of the AV Communication Specialist

the proceedings of a DAVI Seminar
edited by Fred F. Harcleroad

SEPTEMBER-OCTOBER 1960
SUPPLEMENT 2 • $2.00

AV Communication Review

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Published bi-monthly by the Department of Audiovisual Instruction. Second-class postage paid at Washington, D. C.

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Send manuscripts, books for review, and editorial communications to the editor at 1355 Inverness Drive, Pasadena 3, Calif. Send subscriptions and business communications to the Department of Audiovisual Instruction, 1201 Sixteenth Street, N.W., Washington 6, D. C.

Subscription Rates: $6 per year; $12 with membership in the Department of Audiovisual Instruction ($5 of which is allocated to this journal); $1 for single copies. (This special issue is available at $2.00.)

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The proceedings of a DAVI Seminar
edited by Fred F. Harcleroad

The Seminar on the Education of the AV Communication Specialist reported in this volume took place March 2-4, 1960, during the annual convention of the Department of Audiovisual Instruction in Cincinnati. The Department expects to schedule further seminars to pursue the question treated here in exploratory manner.

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Editor's Foreword

THE SEMINAR ON PROFESSIONAL EDUCATION, convened during the 1960 DAVI National Convention in Cincinnati, produced thought-provoking papers, resulted in combustive participant interaction, and broke ground for the professional edifice which the AV communications field expects to build.

This second supplement to AV COMMUNICATION REVIEW presents these papers and an analysis of the seminar as a whole by the special supplement editor, Fred F. Harcleroad, president of Alameda County State College in California.

Sections I and VI contain Dr. Harcleroad's personal commentary. Sections II, III, IV, and V include the prepared papers together with selected quotations from the seminar discussions. In its entirety, the report represents a start toward defining a body of intellectual content for the education of the audiovisual communication specialist.

The editors of AV COMMUNICATION REVIEW wish to thank Dr. Harcleroad for his thoughtful and time-consuming editorial task in bringing the seminar into perspective. They also acknowledge the contributions of those participants who gave papers and those who joined in the discussions to add greatly to our understanding of this basic problem.

William H. Allen

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SECTION I

The Education of the AV Communication Specialist

FRED F. HARCLEROAD

In 1953 James Finn concluded his classic article in the first issue of AV Communication Review with this statement: "The audiovisual field is not yet a profession."[1] His conclusion followed an examination of six main criteria which by Finn's definition typified a profession. They were: (1) an intellectual technique; (2) an application of that technique to the practical affairs of man; (3) a period of long training; (4) a close-knit association of members with a high quality of communication between members; (5) a series of standards and an enforced statement of ethics; and (6) an organized body of intellectual theory constantly expanding by research.

According to Finn's evaluation in 1953, audiovisual communications personnel met the first and second criteria, were low but improving in four and five, and rated very low on three and six. In other words, they lacked the "long period of rigorous training substantially agreed to by the members of the profession" and the "organized body of intellectual theory constantly expanding by research."

The March 1960 seminar reported in this volume was called to deal specifically with the third of these points—but some of the papers and much of the discussion centered around the sixth. Without agreement on the intellectual theory and relevant subject matter content, the establishment of a generally accepted educational pattern was impossible. It must be noted that a general agreement was not expected to

[1] Finn, James D. "Professionalizing the Audiovisual Field." *AV Communication Review* 1: 9-16; Winter 1953.

result from this first seminar. It was designed to discuss issues, to present various points of view, and to examine existing educational patterns. In this respect the seminar succeeded eminently and represents a distinct forward step. The ferment started by the discussions could make the 1960 DAVI meeting one of the most important since that momentous meeting almost a decade ago which resulted in the single DAVI yearbook edited by Charles Schuller; the start of the research-oriented journal, AV COMMUNICATION REVIEW; the beginning ideas for the administrative magazine, *Audiovisual Instruction;* and the various monograph series published by the national committees (such as the ones on building standards developed by Foy Cross, Irene Cypher, and others). These media of communication, crucial to professional growth, have bound audiovisual people together and have resulted in status for DAVI both here and abroad. When they are coupled with DAVI's expanding operations and conferences, the audiovisual group now rates well on the fourth criterion. It is fervently hoped that the 1960 seminar discussions and this monograph will lead to additional, more conclusive steps toward: (1) a comprehensive intellectual theory of audiovisual communications; (2) agreement on educational requirements to be met by individuals entering the profession at its various stages or steps; and, (3) continuing work on the development and enforcement of a code of ethics.

An Historical View of AV Theory

The seminar discussed present intellectual theory of the field and mentioned or inferred five main existing ideas. These are:

1. The concrete-to-abstract relationship. Suggested as early as 1910, but presented most forcefully by Hoban in the late 1930's and later by Edgar Dale in his 1946 Cone of Experience.

2. The "cafeteria of materials." A concept which stresses study and analysis of the advantages and disadvantages of each type of learning resource.

3. Technical theory. This relates to operation and improvement of the technical equipment which makes materials available to teachers and students.

4. Optimum synthesis. Advanced by William Exton during World War II, it emphasizes the team approach to materials production, i.e., subject-matter experts, learning psychologists, and audiovisual specialists working together in the production of learning materials. This

basic principle has been extended to curriculum materials preparation and the addition of curriculum supervisors to the team.

5. Optimum use of materials for learning by individuals. Based on educational psychology and the psychology of learning, this concept envisages materials as close as possible to students and classroom for immediate use when needed.

While these basic theories were not a subject of major discussion, they are important to consider in relation to the following questions and catchwords which were the fireworks of the seminar.

Communications—What Does It Mean for AV Specialists?

From the first 15 minutes it was clear that communication was defined in its social context—with the assumption that AV specialists need background and study in such areas as social psychology, cultural anthropology, linguistics, and sociology. However, it also became clear that basic courses in communication skills and advanced engineering courses in electronic communication theory were the specific responsibility of other professional groups.

George Gerbner made the point that "you can define a field but professionalize only a discipline." He went on to stress the point that communication research comes from many content fields. No one group, not even faculties of schools or departments of communications or audiovisual media, can claim or know the entire research in human communication. He suggested that audiovisual communication specialists should include as basic studies (1) the analysis of communication in the learning process, (2) analysis of its interaction with social and technological change, (3) communication systems and their role in education, society, and popular culture, and (4) communication needs and resources of society. Both Gerbner and, particularly, A. W. VanderMeer stressed (5) the role of educational philosophy (and of differing philosophies) as an essential foundation for AV specialists so that they can analyze and determine the best use of materials and the best organization of resources for the students and teachers they serve.

Dr. Gerbner's most important point may well be his emphasis that the audiovisual specialist should develop a "value-conscious approach" to communications rather than the "mass" persuasion approach which emphasizes the effects of communication media without much analysis of what content should be allowed into the communication system.

Is the Media the Message?

Or, is the message something carried by the media, and something to which each individual responds selectively? Marshall McLuhan believes the media *is* the message and by historical analogy, persuasive rhetoric and dogmatic assertions develops an interesting case. For example, in the discussion following his paper he said:

> I'm bold to say that radio is the cause of fascism in Europe. And it is creating absolute havoc in Africa at the present time. When you turn radio loose on a society that is already trapped, what happens? They go crazy. It steps up the old tribal activities in crazy intensity. Out of concern with human feasibility, I would point to the fact that television is a tranquilizing, non-tribalizing force, and that we should be spending millions putting television into Africa, into India, and into Russia. Russia doesn't like television, you know—they prefer the tribal intensity of radio. They are still feudal. You haven't heard much about communism in North America since television came in. It just dwindled, dwindled, dwindled. Television is a tranquilizing force and it is possible to spell it out in minute detail. It's visual in low-definition. The projected completion takes the form of going back and intensifying the visual. In the high-definition of television, you are the screen, you are the scalpel, you are the process. Whatever is happening in television, you are "with." That's the only phrase for television—you are "with." Notice, you are not a spectator in television, you are not a camera eye, you are the screen.

This radical contribution to AV theory contradicts almost every other theoretical statement in AV literature. For example, the summary of the discussion groups following Ernest Melby's keynote address to the 1960 DAVI convention reports a consensus "that the media is only as successful as the individual using it" and a conviction "that the machine and gadgets are of lesser consequence and that the human being is the most important teaching tool." [2]

These viewpoints appear to be irreconcilable. At this point McLuhan's thesis, or theory, appears to this writer to lack either experimental proof or rigorous, logical, and consistent historical proof. However, his attempt to apply Lewinian field theory to each type of communication device is intriguing. Kurt Lewin computed a valence (or power) for the drives and actions of animals and men. Mr. McLuhan has ascribed a power to each type of machine, based on its structural impact, its high or low definition, and the subjective completion it forces on the persons affected. Apparently he assumes that these powers are inherent in the machines themselves or their relationships to each other as they are invented and placed in use. The re-

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[2] "The Keynote—and Aftermath." *Audiovisual Instruction*, June 1960, p. 165.

ceptivity of the individual and signal sent through the machine have no effect on the type of reaction. Obviously, if there is the slightest truth to his proposal, the persons controlling the media have even greater powers than has been suggested to date. Thus while actively disbelieving, or acutely misunderstanding, most of what Mr. McLuhan wrote and said, this editor still feels his paper deserves intense study and thought, if for no other reason than his interesting but confusing use of language. Seriously, any AV communication specialist should do his best to understand it and test the proposals in any way possible.

Most of our intellectual heroes were heretics who discarded widely held theories about man and his universe, substituting new and great thoughts of their own. We need evidence to determine whether McLuhan's are of the Copernican type or better ascribed to Baron Munchausen.

Negative Entropy and the Shadowy Specter of a National Curriculum

The urgency of the present world ideational conflict has made optimum education of every person a matter of national concern—as a part of our national defense. At the same time new media of communication make it possible to reach millions of people simultaneously. This resulted in one of the great debates of the seminar. The topic? Will there, can there, should there, be a national curriculum? Technically it is possible, and instructional systems [3] have been developed which could put a national curriculum into effect by means of audio-visual devices now in production. Finn described an extreme possibility which is technically feasible, with each of its parts operating right now in one place or another. A complete instructional system covering the first course in physics could be given by videotape over a national network, the students could be tested by a national testing system, and the credit accepted by colleges or high schools anywhere in the country. In this way, commented Dr. Finn, not only the teacher but even the local school system could eventually be eliminated.

His concept of negative entropy means basically that the introduction of more energy into school systems (in the form of more projectors,

[3] Quote by James Finn from seminar discussions: "The MIT physics package is a total instructional system where you have (1) a new textbook, (2) a manual of experiments, (3) a book on how to make parts of the apparatus that you can't buy, (4) some of the apparatus, (5) 80 films, (6) paperback books that go with this, and a number of other things, such as (7) planning tapes, (8) filmstrips, and (9) a program written as a teacher's manual for the entire system."

films, and materials of all kinds) demands intensified organization. As more energy (TV equipment and programs, for example) is introduced into larger units, the organization becomes more complex and more inflexible. Instructional systems of national scope could result, in effect, in a national curriculum. Increasing technology, energized systems and tighter organization can, and undoubtedly will, push us to more social pre-determination of curriculum and, more conformity. In essence, Dr. Finn said that technology can run rampant over individuals unless educators understand its potential and rigorously control its use. "Programming," he said, "is the heartland of the educational system" and "determination of specifics of educational programs should remain in the hands of educators."

The Unpredicted Curriculum

Finn's proposals and warnings aroused several members of the seminar who emphasized the importance of the individual in contrast to such a "dehumanized approach" to teaching and learning. Keith Tyler proposed the need for the "unpredictable" or "unpredicted" curriculum which enhances the great objectives of education in the United States. Specifics which he itemized are "creativity, inventiveness, learning how to get along with other people, performing democratic processes such as discussion, planned research in the community," and values which come from small group situations where there is interaction.

The following exchange typifies the conference discussions and emphasizes the concern shared by most of the seminar members.

JAMES FINN *(explaining with the aid of a chart the seven implications envisaged in his theory of negative entropy and instructional systems):* We're moving, one, to greater costs, not less; two, toward increased efficiency; three, toward more technical personnel; four, to larger educational units, there's no doubt about it. Five, I think there's implication here for a national curriculum—you'll note it's question-marked, but I think some part of it may be inevitable whether we like it or not. Six, there'll be a greater demand on the professional for work (at the point of creating the energy you take a lot of human sweat and inventiveness). Seven, instructional systems will have built-in obsolescence. I think this theory contains a content area for professional training. We have to establish the unit of social energy, an empirical problem which I think can be solved. If such theory does develop into a quantitative form, we can engineer instructional systems. And then this whole theoretical development that I have sketched as possible, can become another basis for professional education.

FOY CROSS: I know you understand this problem but your assumption that everybody understands it, I think, is the big danger. We are interpreting or defining education as communication. These machines make it very easy for us to

define education as communication of a certain body of controllable, programmable knowledge and action. These other things (dehumanization, lack of problem solving and lack of group interaction) are not generally understood or assumed as a part of education when we work with this technology.

KEITH TYLER: . . . and teaching machines are not interaction, nor is television with feedback, because that is still the individual reacting to the teacher without group interaction.

FOY CROSS: I think the human element has been extracted here and it is necessary to put it back in. Here, today, is an opportunity to put it back in.

JAMES FINN: You are only going to put it back in if you work in terms of systems. If you let it go haphazardly, you are never going to get it anywhere. You have to *plan* to put it back in, that's all I am saying.

FOY CROSS: Another implication that is just as sure as dehumanization is lack of creativity. It seems to me there's this implication which follows just as sure as your other seven points.

JAMES FINN: Well, this can well happen and we may be in for the biggest national brainwashing you ever saw. I don't like it any better than you do, but as an observer I have to make this possibility known.

FOY CROSS: You've already been brainwashed!

JAMES FINN: No, I haven't been brainwashed!!!

ARMAND HUNTER: I think we should not lose sight of the fact that these systems, methods, and devices are already in existence and that they are being used independently of the school room and our formal education system. I think in our concern here with training people as audiovisual specialists in the school system, at whatever level you wish to put it, we're really talking about our training of all people who eventually are going into communication work in our society.

Later, Melvin Brodshaug pointed out that the communicator for any assigned group, using any type of media, had to know his audience's characteristics and the individuals in it or his message would go "awry." This completely contradicts McLuhan's key theory and pin-points a fallacy in the giant instructional systems envisaged in Finn's paper. As with McLuhan's paper, however, Finn's Law commands attention and merits serious experimentation. As international stress increases, the needs of our society may seem to conflict constantly with freedom for individuals. Audiovisual communication specialists, primarily imbued with the findings of educational psychology and its emphasis on the individual, must be alert to implications, opportunities, and dangers from constant technical improvements in mass media and their use for instruction, persuasion, and/or indoctrination.

"Captive" Audience, "Free" Audience, and The Gatekeeper

Both schools of education and of communication currently enroll students preparing to serve our society as specialists in the field discussed here. A crucial, basic difference in objectives of the two schools

is emphasis on: (1) the "captive" audience of the public schools or (2) the "free" audience reached through other channels. As pointed out by Walter Wittich, the "captive" audience of the public schools may be present physically but must still be reached mentally. L. C. Larson advanced the concept of the "gatekeeper" (teacher) who holds the key which opens the classroom to outside communication media. In certain government and industrial training the instructor holds the same position but not as completely as the public school teacher. Mr. Larson went on to say that to do a good job of programming materials into organized audiences we probably need to know more about the gatekeeper than the ultimate audience. The "free" audience is reached through competitive, unsubsidized means. The "captive" audience is most often reached through the "gatekeeper" in an organized, subsidized program. Thus reaching the free audience or the gatekeeper becomes a real problem for study and research.

Other basic differences to consider include the profit motive in use of mass media by business or industry. Commercial art, radio, and television may provide (1) general information, (2) advertising and promotion, or (3) entertainment; but the basic purpose is mass persuasion or mass selling. On the other hand, the public service motive emphasizes the instruction of individuals even though they may sometimes be reached "en masse." In both situations the same basic theories and technological "tools" are analyzed and studied. However, they are basically used for a different purpose when the motive is profit.

Students from schools of education and/or communication enter both types of work. Melvin Brodshaug indicated that approximately one fourth of their students at Boston University have gone into public education and another quarter into government service. However, discussants at the conference seemed generally agreed that the emphasis in the school of communication centers on the "free" audience and the school of education on the "captive" audience. Thus great differences can arise in approach to many similar topics.

One major curricular difference, brought out by Paul Witt on several occasions, is the need for professional internships in very different situations. Likewise, many applications of theory may differ radically among the different schools. Schools of education, undoubtedly, need more social psychology orientation, and schools of communication may very well need more educational, or learning, psychology. But, as Dr. Brodshaug carefully pointed out, every major university has the

need and room for both types of schools and they can work together cooperatively to provide different points of view.

Both programs are relatively new and in the process of being structured. Schools of communication are less than two decades old and audiovisual communications specialization in schools of education is not much older. Both new fields are open to students with diverse backgrounds and from various subject matter fields. Unlike older, more structured fields of study, prerequisites tend to be flexible in both areas. When student bodies are relatively small, programs are "customized" in many universities. More rigidly structured programs will develop when more students enter each field. As L. C. Larson put it: It costs no more to "set up our own program" than to set up additional sections in some other school in the university.

The problem now for the developing profession is to analyze the theory and try to provide guidelines for those universities with a sufficient number of interested students to justify programs. We must proceed apace to discover and determine a body of content which is scientific and sequential enough to develop into a curriculum.

Special vs Liberal Education

The audiovisual communication specialist is the same as any other professional person and needs a sound liberal education. This conference emphasized the social sciences, both in papers and discussions. Everyone agreed on the need for such background but several proponents conceded that much of it cannot be provided in the doctoral program. Advanced professional study in this field must be based on fundamental background from the social sciences, humanities, and the sciences. During advanced study some special attention must be given to such fields as social psychology and cultural anthropology, since communication theory and theory of audiovisual instruction are based primarily on research from the social sciences. The doctor of medicine needs a fundamental education in the fields of physiology, anatomy, chemistry, physics, bacteriology, and psychology. Through application of this background he becomes a professional in the practice of such specialties as surgery, orthopedics, and pediatrics. In the same way the natural sciences and social sciences can contribute from their many fields the background necessary for audiovisual specialists to learn and practice their profession.

The "Rocking Horse" Curriculum

The breadth, diversity, and rapid changes in the demands on the AV communications specialist led one conference participant to describe the curriculum as a "rocking horse." Although changing rapidly, it really does not change any more than other professions. Given a sound base in definition, intellectual theory, and philosophical approach, the seemingly rapid change will fit into a framework.

In further organizing the professional curriculum several problem areas are clear. These are: (1) selection of persons for entrance into the profession, (2) levels of specialization, and (3) the need to offer services to persons basically in other professional work.

The selection of entrants to the profession is extremely important. Personal and ethical characteristics occupy a position of primacy in any profession. This is particularly true when an enforced code of ethics is one of three basic needs of this developing profession. Prerequisite experience is another key selective point at issue. Walter Beggs stipulated that prior teaching experience is vital for persons performing special professional work in school systems. Psychologists, psychometrists, TV production men, and others disagree on this as a selective factor. Certain phases of audiovisual specialization may well require prior teaching experience; others do not. Likewise, certain technical skills might be prerequisite selective factors. This first seminar did not dwell on "selection"—a question to which DAVI should give attention.

The levels of specialization are well-differentiated in two ways. The first breakdown is by service unit: (1) the AV coordinator or representative in an individual school, (2) the director of a central service office in a college or school system, and (3) any position with wide policy responsibility and the college teaching and research assignments.

The second breakdown is by highly specialized technical knowledge and ability in such areas as graphics, TV or radio production, photography, curriculum materials production, and the judgment and selection of learning resources. Any AV communication specialist needs some understanding of each of the technical fields and considerable skill in two or more. Each specialist must serve as the coordinator of several persons with skills covering these fields. In an individual school or small service center the coordinator must call on other skilled teachers or students to perform in some of the fields. Larger centers—whether city, county, college, or state—will employ persons to cover these areas.

Thus any coordinator or director needs understanding of human relations and team leadership if he is to operate successfully. Insofar as these can be taught they should be included in any planned curriculum.

The AV communication specialist also needs a sound basic knowledge of learning theory and of how various types of learning resources differ in value. The managerial specialist in a large service center (one with wide policy responsibility such as a state director or bureau chief) or the theoretical researcher and teacher will come from the group of persons with (1) superior skills and understanding at the operational level, and (2) broad interests and depth scholarship in the field.

Increasing recognition, status, and salary for these levels of specialization means that a graduated, increasingly intensive educational program will result. At present, Indiana offers a minor for the bachelor's degree in AV communications, designed for persons who wish to become building coordinators. An undergraduate major in a technical field such as commercial art, photography, or radio-television may be the best entry for specialized personnel in these fields. However, they should also be in a position to take a minor in education which would cover beginning course work in curriculum and AV communications. These developments hold real promise at the undergraduate level.

Graduate programs, based on either of these two approaches, should provide credentials, certificates, or master's degrees for improving performance in the specialized technical field or developing persons to administer and coordinate large service centers. Doctoral programs, with broader interdisciplinary work, should provide personnel for positions at the third level, either managerial or research and teaching.

The audiovisual profession, like any other, is supported by basic ideas and theories from various fields, which are studied at every level. Since the ideas are actually applied by AV communication specialists after study at each level, the field is comparable to that of engineering and chemistry rather than medicine. Thus each idea or theory is gradually studied in more depth, and interdisciplinary work increases at each level.

The evolving AV profession must address itself to developing (1) this essential professional content, (2) the related interdisciplinary studies, and (3) a desirable liberal education basis for these studies. This first seminar opened the subject but it left much to be done in the near future. The papers which follow provide excellent background for further exploration.

SECTION II

Present Patterns of Education and Research

PROVOCATIVE QUOTATIONS FROM THE SEMINAR DISCUSSIONS

Donald Ely

"If there is any one observation I could make about these [communications programs], it is . . . their diversity. These communications programs are integrated by an administrative rather than by a philosophical structure. I think that the best integration occurs at the doctoral level rather than at the master's or the bachelor's level. People who are preparing audiovisual specialists need to take note of this move toward communications. We've had our blinders on too long. We've lived in airtight compartments being concerned about perpetuating the audiovisual functions which are traditional in terms of distribution, circulation, selection, and administration of program, rather than thinking of the frontier issues that confront us in education. In the preparation of audiovisual specialists we have to take note of some of the interdisciplinary work that has begun to develop in the communications programs even though they are less than 20 years old."

Paul Witt

"If this person is going into Newton schools as audiovisual specialist-generalist, then his laboratory field experience ought to be quite different from the communications specialist who goes into commercial television or government work."

Melvin Brodshaug

". . . in the future every cosmopolitan university will probably have something in the nature of a broad communications program. Let me

point out what I regard as one rather crucial difference between the audiovisual approach and the communications approach. Educational audiovisual people are dealing almost exclusively with captive audiences. In schools of communication we deal almost exclusively with the opposite. Let's call it the free audience. This is a very important difference, and I think it's a difference that should be given more attention in education."

L. C. Larson

"Higher institutions are copycats after a fashion. They don't want to go too far beyond what other institutions are doing. They don't want to be the last, and they don't want to be the first to undertake a program, or an extension of a program, or to add embellishments to the program, and so we do have here the problem of exchange of ideas among institutions."

Curtis Ramsey

"You must start first with people who are oriented toward schools and toward learning processes and utilize your full range of communications media to advance these purposes. I know in terms of program design that in the teachers colleges, rather than universities, it would be very difficult to expand a full program like this. It's going to have to be within the framework of the baccalaureate degree where professional education is now being squeezed to a very small level. By and large they would be expecting that these people be teachers, curriculum-oriented first with the embellishments and additions of specialists later."

Charles Schuller

"We know very well that you don't prepare an audiovisual specialist in any sense simply through course work, regardless of what that course work may be. He has to be exposed to audiovisual techniques in the old sense to which all educators agree, either confidentially or openly. He has to be taught this way in his university courses in history, microbiology, or whatever the case may be. And accordingly, if we're going to function effectively, we've got to have an impact upon our universities as a whole.

THE COMMUNICATIONS SCHOOL: NEOPHYTE IN HIGHER EDUCATION

Donald P. Ely

THE VERY MENTION of a "school of communications" within the halls of many an ivy-clad institution immediately thrusts a semantic roadblock in the academic mind. To some people, a school of communications is a convenient verbal tent to house several departments which do not have a home elsewhere; to others, it is a unifying concept which amalgamates diverse media into an academic whole with a common core of concern about social institutions in our world today; to still others, and they are in the majority, it is a foreboding question mark challenging the *status quo* of traditional departments which might join under the communications banner.

This obvious confusion first came under the scrutiny of the Department of Audiovisual Instruction four years ago at Detroit when Gordon Sabine stated the general tenor of the open meeting on the development of communications programs. According to his statement:

1. There are a dozen or so departments and divisions and schools with the word communication or communications in their titles—yet no two of them appear to be doing anything like the same thing.

2. We have organized curricula in communications, but we have not yet identified what it is that will be our unique body of subject matter.[1]

This *ad hoc* committee ended its session by recommending that a study be undertaken to ascertain the present status of communications programs. There is, however, no record of any study made as a result of this meeting.

In that same year, James Finn stated the climate of confusion when he spoke before the General Education Section of the Association for Higher Education. He said that there was no doubt that the concept of communication had become "a seminal, organizing concept that runs like a series of arteries throughout the body of most of the social sciences, some of the physical

Original title of this paper: "An Analysis of Present Patterns for Training and Research Within Schools of Communications." See list of participants on page 4 for author's affiliation.

[1] Brodshaug, Melvin, and MacLean, Malcolm S. Jr. "Communication Programs in Higher Education." *AV Communication Review*, Vol. 5, No. 1; Winter 1957. p. 395.

sciences, and even here and there in the humanities." [2]

The confusion has not subsided. Only a little over a year ago, a journalistic battle raged over the word "communications" as it related to university courses using that label. It began when Edmund Wilson wrote in the *New Statesman:*

> I do not know how *communication* first came to be extended from the telegraph and telephone to the periodical press and the whole network of popular amusement—motion pictures, radio and television—nor how the fine arts came to be lumped in with these . . . It seems to me that the new blanket use of the word implies . . . a drive on the part of the directors of political and business enterprises to manipulate large groups more effectively, on the part of our ever more centralized governments to bring their population into line.[3]

Wilson brought Jacques Barzun into the fracas to reinforce his skepticism by quoting from a personal letter:

> At various times I have tried to prevent the use of 'communication' and, worse still, 'communication arts', to designate courses in radio, television and the rest. But it is a lost battle, at least until someone fashions a new word. Meantime, the confusion persists.[4]

Gilbert Seldes picked up the blast and returned fire via his *Saturday Review* soapbox:

> I can see why Mr. Wilson wants to deny a large-sounding name to entertainments he finds trivial and mocks at . . . I can see why Dr. Barzun thinks 'communication arts' an unnecessary rubric for courses in lighting, lens adjustment, and dissolves in television, although courses in the technique of painting come under the Art and proper use of the pedal comes under Music. But Mr. Wilson is hostile and Dr. Barzun is skeptical—and the vital fact is that a new thing has come into existence—a revolution in the ways by which the minds of men are reached—to entertain and to inform and to persuade.[5]

Even within this atmosphere of confusion, communications programs continue to be established. Harold Lasswell, one of the early pioneers in communications thinking, has identified this burgeoning field as "an emerging discipline." [6]

It would be well to stop at this point to indicate what is meant by a school of communications within the context of this paper. "School" in this case is generic and must include administrative units using various labels but basically pursuing the same objectives. Thus we include college, department, division, committee, group, and so on. For consideration in this paper, however, the communications programs must give evidence of a coherent arrangement of courses and/or administrative patterns which shed light on communications as an interdisciplinary field of study. The academic portion of the program must lead to the baccalaureate and/or advanced degrees in communications or display evidence that an interdisciplinary approach is followed.

Even within the confines of higher education, it is necessary to carefully define communications programs. Otherwise there is likely to be some misunderstanding between the approach to communications which identifies itself with the traditional field of English and speech in elementary college courses and the approach which is a study of the social institutions and processes of

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[2] Finn, James D. "Needed—A New Concept of Communications in General Education." *Current Issues in Higher Education 1956.* Washington, D. C.: Association for Higher Education, National Education Association. p. 226.

[3] Wilson, Edmund. "More Words of Ill-Omen." *New Statesman,* September 13, 1958. p. 344.

[4] *Ibid.*

[5] Seldes, Gilbert. "The Word or the Fact?" *Saturday Review,* November 1958. p. 26.

[6] Lasswell, Harold D. "Communications as an Emerging Discipline." *AV Communication Review* 6: 245-54; Fall 1958.

communications in society. This paper deals with the latter tributary.

The information reported here has been gathered from 20 institutions which meet the limitations for a communications program defined earlier. Catalogs and brochures were used for general information. More specific details were gleaned from questionnaires and, in some cases, further data came from interviews with the program's chief administrative officers and their immediate superiors. The institutions surveyed and the description of each program are shown in Table 1 on pages 24-25. The degrees are on various levels, as indicated in the second column. One of the most interesting aspects of the communications umbrella is the diverse areas which constitute parts of the whole. These areas are noted in the final columns of the table.

There is some unity in the diversity, however. The backbone of the communications programs in higher education would appear to be journalism and radio-television, both of which are found in 16 institutions. A lesser emphasis is found in the audiovisual-cinema (motion picture production) aspect of the audiovisual area which is the prime concern here. The fact is that motion picture departments are often found within audiovisual centers and that the academic home of audiovisual (and hence motion picture production) is a school of education. Audiovisual education is a part of the communications program in only three cases. The traditional areas of speech, advertising, and public relations are found in six institutions.

There are five aspects of a university's work in communications:

1. Preparation of professional personnel for the various media—the academic program
2. Research
3. Teaching about communications in the liberal arts
4. Use of the media for instructional service within the university
5. Use of the media for relating the work of the university with the larger community.

Numbers 3, 4, and 5 are primarily service functions. We are concerned with the academic program and the research activities here.

CURRICULA

The Undergraduate Program

There are 13 institutions offering undergraduate degrees in communications. The curricular patterns vary, just as other aspects of the program do. The most common pattern is for a student to major in a traditional field, within the communications family, and select other areas related to the broad field of communications as minors. Another approach is one in which the student majors in communications but, in effect, selects a traditional field for major emphasis and uses other supporting areas to complement his major emphasis. The most popular traditional fields within the communications programs are journalism and radio-TV.

In eight of the 13 institutions which offer the baccalaureate degree, there are certain core courses required of all major students regardless of the traditional field of specialization. Generally these courses synthesize the various disciplines and offer a survey-type course in communications. Representative course titles are: Introduction to

Mass Communications, Survey of Mass Communications, Critical Analysis of Radio, Television and Motion Pictures, History of Communications, and so on.

The communications program is far from being inbred at most institutions. It is more a debtor area than a creditor. Undergraduate students in communications are encouraged or required to take psychology, sociology, economics, and political science in more than half of the undergraduate programs.

The conclusion which must be drawn at the present time concerning these undergraduate programs is that an interdisciplinary field is emerging primarily by administrative integration. The curricular integration is achieved by requiring certain core courses of all students. Academic respectability is engendered by encouraging or requiring a strong supporting sequence of courses in the social sciences. While almost every undergraduate program has a preponderance of practical, media-centered courses, there is a swing away from the "trade school" approach to an emphasis on the various media as social institutions operating within a contemporary context.

The Graduate Program

On the graduate level, there are 13 institutions which offer the master's degree. The undergraduate curricular pattern still persists. Eight institutions require a major in a traditional field with supporting courses from other communications areas and the social sciences. The traditional fields selected for study tend to be the same—journalism, radio-television, speech, etc. The idea of core courses remains with such catalog headings as: Communication and Society, The Communication Process, and Public Opinion and Attitude Change. Most students pursuing graduate study have had an undergraduate major in journalism or the social sciences.

At the doctoral level, however, the interdisciplinary program emerges in its purest sense. Undergraduate and early graduate work have prepared the student in one or two traditional specializations and now he appears to be ready for the study of media as social institutions rather than as technical processes. All Ph.D. and Ed.D. programs in communications are designed to fit the student's interests and needs. There are still required core courses but they take the form of seminars in research methodology in the mass media.

Graduate students are encouraged to take related courses in sociology, psychology, and political science in that order of emphasis. Other areas are encouraged, depending upon the student's objectives. Economics and linguistics fall in this catagory.

RESEARCH

One of the prime moving forces behind the establishment of programs in communications was the opportunity for interdisciplinary research. This objective exists in nearly every communications program, but it is being accomplished in relatively few institutions.

Theses and dissertations constitute much of the research activity. Several universities have gone beyond this obvious direction and have established "institutes for communications research." It is in these organized units that the interdisciplinary research is being done. Among beneficiaries are state and federal government agencies, business and industry, professional organizations, and the university.

TABLE 1—COMMUNICATION PROGRAMS AT INSTITUTIONS OF HIGHER EDUCATION

Institution	*Administrative Unit or Program*	*Degrees*				*Contributing Areas*								
		Undergrad	*1st Year Grad*	*Adv. Grad*	*Education*	*Journalism*	*Radio-TV*	*AV-Cinema*	*Speech*	*Drama*	*Public Relations*	*Advertising*	*Photography*
Boston University	School of Public Relations and Communications	BS	MS			X	X	X			X		
University of Chicago	Committee on Communication, Division of the Social Sciences		MA										
University of Florida	School of Journalism and Communication	BS				X	X				X	X	
University of Idaho	Department of Communications, College of Letters and Sciences	BA				X	X	X					X
University of Illinois*	College of Journalism and Communication	BS	MS	PhD		X	X					X	
Indiana University	Area of Audiovisual Communications, School of Education	BS	MS	PhD	EdD	X	X	X					
State University of Iowa	Ph.D. in Mass Communications School of Journalism			PhD		X	X						
Michigan State Univ.	College of Communication Arts	BA	MA	PhD		X	X	X	X	X	X	X	
New York University	Communication Arts Group	BS	MA	PhD	EdD	X	X	X	X		X		
University of North Carolina	M.A. in Communication, Department of Radio-TV and Motion Pictures		MA				X	X					
Oklahoma State University	School of Communications	BA BS				X	X		X	X	X	X	X

TABLE 1—COMMUNICATION PROGRAMS AT INSTITUTIONS OF HIGHER EDUCATION—(*Continued*)

Institution	*Administrative Unit or Program*	*Degrees*				*Contributing Areas*							
		Undergrad	*1st Year Grad*	*Adv. Grad*	*Education*	*Journalism*	*Radio-TV*	*AV-Cinema*	*Speech*	*Drama*	*Public Relations*	*Advertising*	*Photography*
Univ. of Pennsylvania	Annenberg School of Communications		MA				X	X					
Univ. of Southern California	Division of Communications		MA	PhD		X	X	X	X	X			
Southern Illinois Univ.	School of Communications	BS	MA			X	X		X	X			X
Stanford University	Department of Communications and Journalism, College of Humanities and Sciences	BA	MA	PhD		X							
Syracuse University	Ph.D. in Communications, School of Journalism			PhD		X	X				X	X	
Teachers College, Columbia University*	Program in Communications and the Communication Arts		MA	PhD	EdD		X	X	X	X			
Temple University	Department of Communication, School of Business and Public Administration	BS				X	X						
Univ. of Washington	School of Communications	BA	MA			.X	X				X	X	
University of Wisconsin	Ph.D. in Mass Communications, School of Journalism			PhD		X							

* The Table on these pages, which appeared on page 71 of the Winter 1960 issue of this journal, was presented to the seminar by Dr. Ely. Subsequently these alterations were suggested: George Gerbner stated that the Ph.D. program in communications at the University of Illinois is administered by an interdepartmental committee responsible directly to the Graduate School administration. Louis Forsdale indicated these additional contributing areas to the program at Teachers College, Columbia University: psychology, linguistics, English, and fine arts (including art and music).

The research is done primarily by the teaching faculty who carry a partial research load. In some institutions, it is accomplished by faculty members devoted solely to research. Graduate students under faculty supervision also handle certain aspects of it.

A few case studies will indicate the type of research being done. All of these examples are taken from a recent report of the research in progress at the Institute for Communication Research, Stanford University.[7]

1. A study concerned with the effects of television on children in TV-saturated areas, areas with new television installations, and areas without television.

2. A study and publication on how behavioral science knowledge is communicated and utilized.

3. A study on attitudes and knowledge of communities with respect to their schools.

4. A study on the problem of communicating knowledge and changing behavior with respect to child care.

5. A study which attempts to describe the different kinds of national communications systems that exist, on the assumption that if systems can be understood better their interactions can also be understood more clearly and predicted more confidently.

6. A test of public attitudes toward the press.

7. A study to determine what happens to a community and its individuals as a result of being without a local newspaper for a long period of time.

8. A study to determine the effects of a political telethon.

9. Other studies are in subliminal perception, semantic differential, content analysis, and the communication patterns of elderly people.

A large bulk of the research being done by the faculty of communications programs is for the media industries. While results of this research are probably of some value, the sponsor rather than the communications field usually reaps the benefit.

It is interesting to note that after one year of the National Defense Education Act, only one communications research program has directly received a grant under Title VII. While some of the grants may be for interdisciplinary research, this fact is usually hidden by the identification of one principal investigator rather than the several people who might be involved. One might wonder if communications research has come of age.

The present state of communications research was recently analyzed in the *Public Opinion Quarterly* by three men who have been closely identified with the research of the field. Here are their comments. Bernard Berelson indicates that:

> . . . 'the great ideas' that gave the field of communication research so much validity 10 to 20 years ago have to a substantial extent worn out. No new ideas of comparable magnitude have appeared to take their place. We are on a plateau of research development, and have been for some time. There are two ways to look at this phenomenon, assuming that it is correctly gauged. One is to regret that no new 'breakthrough' has developed in recent years; the other is to be grateful that the field has a period of time to assimilate, incorporate, and exploit the imaginative innovations of the major figures.[8]

Wilbur Schramm believes that:

> . . . communication research has made a solid contribution to our understanding of one of

[7] Schramm, Wilbur. *Appendix to Annual Report to the President 1958-59.* Institute for Communication Research, Stanford University. 18 p. (mimeo).

[8] Berelson, Bernard. "The State of Communication Research." *Public Opinion Quarterly,* Vol. XXIII, No. 1; Spring 1959. p. 6.

the fundamental social processes. It is having a profound effect on the teaching of journalism and other mass communication subjects in our universities because it has made a bridge between the professional or trade activities of these schools and the ancient and intellectual strengths of the university.[9]

David Riesman comments:

. . . work in the field of communications is inviting, at the moment, because of its very ambiguity and lack of structure. It is a somewhat transient way-station where people can meet who don't quite want to commit themselves to the field of literature (as monopolized by English departments) or to the social sciences (as monopolized by departments of sociology or political science) . . . and . . . there is room for people with an interest in economics and aesthetics.[10]

CONCLUSION

This is an audiovisual convention. I like to identify myself as a professional in the audiovisual field. One reason I embarked upon this study was to discover the relationship of the audiovisual field to the broader field of communications. What has been said thus far is a report. What I have to say in conclusion is personal comment.

The present preparation of professional personnel for the audiovisual field largely perpetuates the traditional functions of the audiovisual specialist, i.e., that of procurement, distribution, maintenance, production, and optimum use of materials and equipment. These programs are not developing the leaders and researchers who are so desperately needed at the present time.

The audiovisual field might well come out of its airtight compartment and take a look at itself in perspective. There are some lessons to be learned from the interdisciplinary orientation of the communications field which we might well adopt. In some institutions where communications and audiovisual programs exist in isolation, there might be closer cooperation in curriculum and research. Major programs in audiovisual communications should develop stronger supporting areas in psychology (particularly in the psychology of learning), sociology, and anthropology. Audiovisual courses need not dwell on the "tricks of the trade" but rather move to the issues of educational communications in the context of today's educational situation.

There have been a few indications that we have raised our sights: the DAVI Leadership Conference[11] last August devoted entirely to research; audiovisual personnel in some institutions cooperating on research projects with colleagues in learning psychology; and, several doctoral programs in audiovisual which are, in effect, oriented to an interdisciplinary communications approach.

Much more needs to be done or the audiovisual field will lack the leadership which is required in this crucial era. Even now this leadership is so limited that, on the national scale, only a handful of people are pushing back the frontiers to chart the course for future developments. The fact that this invitational seminar is being held and that communications programs are being considered within the scope of this meeting is a step in the right direction. The audiovisual field is at a point of decision. I only hope that this conference will be the spark that leads to a reconsideration of the preparation of its professional personnel.

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[9] Comments by Wilbur Schramm, *ibid.*, p. 9.

[10] Comments by David Riesman, *ibid.*, p. 10.

[11] The Fifth Annual Lake Okoboji Leadership Conference, August 22-26, 1959, sponsored jointly by the Department of Audiovisual Instruction and the State University of Iowa. Held annually at the University's lakeside laboratories at Lake Okoboji, Milford.

SCHOOLS OF EDUCATION: A PATTERN BARELY VISIBLE

L. C. Larson

I WISH I COULD DESCRIBE in detail the various approaches to training and research in audiovisual communications taken by the many colleges and universities that are developing interesting programs in our field. Unfortunately, this information is not available. The best I can do at present is to report the number of institutions offering the program of courses recommended by DAVI for certification, to suggest a program of action for DAVI, and to point up some of the questions that are being raised by administrators in institutions of higher education concerning the purpose, scope, and organization of training and research programs in audiovisual communications.

DAVI CERTIFICATION REQUIREMENTS

The minimum qualifications recommended for the certification of an audiovisual supervisor as adopted by the members of DAVI at the annual conference in Los Angeles, California, April 1955, include the following:

1. One of the basic requirements for the certification of personnel responsible for audiovisual supervision shall be a valid general supervision or administrative credential in either elementary or secondary education.

2. Persons responsible for audiovisual supervision should have basic competencies in audiovisual education and curriculum as evidenced by graduate level credit or equivalent work experience in the following areas: audiovisual resources and their utilization; preparation of audiovisual materials, such as graphic, projected, and broadcast materials; administration of audiovisual resources in the educational program; and curriculum development on elementary and secondary levels.

DAVI's recommendations for course areas provided criteria for the preparation of a directory of institutions offering a graduate program. Following a survey of all institutions offering graduate work in education, DAVI published in November 1955 a directory (6) of information about colleges and universities offering graduate courses in audiovisual education in at least two of the three areas of utilization, preparation, and administration. The survey was repeated during the spring of 1957 and a supplement was issued the following August.

The original directory and supplement include the names of 32 institutions in 23 states offering a minimum

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Original title of this paper: "Present Patterns of Training and Research in Schools of Education." See list of participants on page 4 for author's affiliation.

of one graduate course in each of two of the three areas and a total of 63 institutions in 30 states offering a minimum of one graduate course in each of the three areas recommended by DAVI as indicated in Table 1.

Since the survey in the spring of 1957, a number of institutions offering courses in two areas have added courses in a third. I am confident, therefore, that by September 1960, more than 75 colleges and universities will be offering a program of courses recommended by DAVI for certification as audiovisual supervisor.

SUGGESTED PROGRAM OF ACTION

The number of institutions that are offering the minimum program of courses recommended by DAVI indicates a growing recognition of the importance of modern techniques of communication for improvement of instruction. Institutions of higher education are interested in offering a program of professional education which will enable their students to qualify for positions of responsibility in the area of educational media. While DAVI's recommendations for minimum qualifications for the certification of an audiovisual supervisor have served a useful function, they do not provide an adequate basis for the expansion and improvement of programs of training and research in audiovisual communications.

For this reason, at the 1959 Seattle meeting, DAVI's Professional Education Committee adopted a resolution recommending that DAVI should, for the next several years, hold an annual seminar devoted to the development of training and research programs in audiovisual communications.

These meetings, in my opinion, should include (a) an analysis of contrasts and similarities among the various programs and (b) a look at the administrative and program patterns through the perspective of possible theoretical frameworks. By making a comparative analysis each year of representative programs, the more distinguishing administrative and program patterns could be delineated and their relationship to educational objectives studied in terms of theoretical frameworks. These frameworks would include the theories of communication held by the various disciplines of sociology, psychology, anthropology, and linguistics.

We need to know more about theoretical models involving communications that are being developed in the areas of curriculum, educational psychology, teaching methods, and school administration. As D. M. McKay has indicated, a theoretical model constructed on hypothetical principles can be thought of as a kind of template which, when held up against an operating program, may provide information either to modify the template or the operating program.

In my opinion, the primary audience for these seminars would be deans of schools of education and persons in these institutions who now have or may have administrative or teaching responsibilities in an educational media program. The secondary audience would be the general membership of DAVI, representatives of related professional organizations, certification officers in state departments of education, and potential employers of professionally trained students.

An organized seminar would attract a small but important audience at the regular meetings of DAVI. The larger

TABLE 1—NUMBER OF INSTITUTIONS BY STATES OFFERING TWO AND THREE COURSES

States	*Number of Institutions Offering Courses*	
	Two Courses	*Three Courses*
Arizona	1	2
California		4
Colorado	1	3
Connecticut	1	2
Florida	2	1
Georgia		1
Illinois	1	2
Indiana	1	2
Iowa		1
Kansas	1	1
Kentucky	2	1
Massachusetts		2
Maryland	1	
Michigan	1	4
Minnesota		1
Nebraska	1	1
New Mexico	1	
Montana	1	
New York	3	7
North Carolina	1	3
North Dakota	2	
Ohio	1	2
Oklahoma	3	2
Oregon	2	1
Pennsylvania	1	2
South Dakota		1
Tennessee	1	2
Texas	2	4
Utah		1
Virginia		2
Washington		4
West Virginia	1	1
Wisconsin		2
Wyoming		1
Total	32	63

audience would be reached through distribution of the proceedings and publication of the more important papers in professional journals. In addition, the creation of interest would encourage some of the associations in higher education to schedule sessions at their annual meetings on professional education programs in the communications field.

QUESTIONS AND ISSUES

Because institutions usually develop programs of professional education by grouping and expanding existing resources to meet training needs and placement opportunities for their students, it can be assumed that there will be many different approaches to training and research programs in audiovisual communications. Comparative studies of various administrative and program patterns and their relationship to theoretical frameworks and professional education objectives should suggest alternative answers to the many questions being raised by deans of education and persons with administrative and teaching responsibilities in the area of audiovisual communications. Some of the questions and issues are: breadth of the field; range of media; student emphasis; level of training; organization of program; research; and administration of program.

Breadth of the Field

The most pressing problem confronting our field is the development of a conceptual framework which will enable us to analyze the meaning and significance of our many activities. Suggestions for a conceptual structure have been described in AV COMMUNICATION REVIEW by Allen, Carpenter, Dale, Finn, Gerbner, Hoban, Lasswell, MacLean, Norberg, Westley, Miller, and others. One entire issue was devoted to a report of two conferences on graphic communication in education held at Yale University in 1953 and 1954 (7).

The need for a conceptual structure was also discussed at the second Lake Okoboji Leadership Conference in 1956. A report prepared by Brooker and Welch (1) states:

> Hoban's presentation of a theory of communications as applied to audiovisual programs was certainly one of the most significant developments of the conference. Audiovisual specialists need either to develop their own body of theory or to adopt the theories of others. The keynote speech presented a theory in substantial detail; later, one of the working papers followed it through somewhat further in its application to audiovisual media. This is a question so basic that it will probably be debated for months to come.

The suggestion that the question of an appropriate theory of communication for our field is "so basic that it will be debated for many months" is an understatement. It probably will be a primary concern as long as audiovisual communications continues as a field and will affect in many ways the various roles of audiovisual specialists. For example, Hyer (2) has reported in a recent editorial three views of the responsibilities of an audiovisual director under the descriptive terms of "curriculum agent," "change agent," and "learning agent." Her sketch of what each would mean in practice follows:

> Curriculum Agent: The most important role of this AV director is as curriculum implementer. He is an active participant in curriculum planning; he is aware of the scope and sequence of experience offered in the school system; he makes available to teachers AV experiences which correlate with the curriculum.
>
> Change Agent: His important role is as implementer of change. He considers himself an administrator or supervisor. He believes he and his staff can never do the AV job; therefore, his role is to change the behavior of others (teachers, administrators, super-

visors, lay leaders) so that they will themselves become good users of AV or, as in the case of the latter, supporters of AV utilization. His interests are in human relations, staff relationships, and in his own role as leader.

Learning Agent: The most important role of this AV director is in stimulating the use of AV resources to improve learning. He diagnoses learning problems and is able to suggest improved materials and utilization techniques to reach the desired learning goals. He evaluates new technological developments in terms of their probable effects on learning.

Range of Media

Another issue is the kinds of media which should be included within a training program. There are those who believe that instead of emphasizing any one or group of media we should emphasize the educational objectives of improving teaching and learning and be prepared to employ the kinds of media and devices which will best facilitate the learning, retention, and application of knowledge, concepts, and skills.

This is the approach followed by many training programs being developed within a communications framework. For example, John Fritz, a former member of our staff at Indiana and now at the University of Chicago, suggested the following objectives for our advanced course in utilization:

1. To recognize in the process of teaching the fundamental role of communication—the representation of persons, ideas, objects, or events through the production and manipulation of cues (verbal and nonverbal) in face-to-face interaction with teachers, other pupils, etc., or mediated by projecting and non-projecting media, such as TV, radio, motion picture, filmstrip, slides, overhead transparencies, flat pictures, tape recorders, etc., as well as the traditionally accepted sources of books, pamphlets, etc. The primary objective of these communications is to enable the learners to perceive such cognitive properties in the cues so as to give rise to those experiences that will promote the desired learning outcomes;

2. To develop competencies as the audiovisual communications specialist in the selection, and purposeful use of given media in order to facilitate this process of cue production and manipulation in the teaching-learning situation. The selection, preparation, and use of these media must be conducted with deliberate regard for the subject-matter content, the intended form of presentation or method of teaching, anticipated effects upon pupils with given conceptual understandings and competencies in symbolic representation (verbal and nonverbal forms of communication), as well as the stipulated goals or desired learning outcomes of the given enterprise.

Also, the trend toward a consideration of the full range of media is reflected in the names of new organizations and their functions. One of the important new organizations in the field is the Learning Resources Institute. It has as one of its functions "to explore more effective ways by which teachers and students can achieve higher educational quality through use of the several learning resources—learning machines, films, electronic devices, textbooks, syllabi, radio and television production of instructional materials, etc."

Another example is the creation of an educational media branch in the U.S. Office of Education which has assumed responsibility for all types of media covered under Title VII of the National Defense Education Act of 1958. This title, as you know, deals with "Research and Experimentation in More Effective Utilization of Television, Radio, Motion Pictures, and Related Media for Educational Purposes."

Student Emphasis

Schools of education will be primarily concerned with training programs for students preparing for positions in schools and in teacher training institutions. Many of the more than 20,000 high schools and a number of the more than 100,000 elementary schools in the United States will want a staff member who can work with teach-

ers in the use and preparation of educational media for the improvement of instruction. Large schools with a well-developed program will need at least one full-time educational media coordinator. Most of the several thousand county and city school systems with an organized educational media program will also need the services of a full-time educational media supervisor or director who possesses experience and education expected of other school administrators and supervisors.

Over 1000 institutions are preparing teachers. Most of these institutions should have on their faculty at least one member with a background of education and experience in educational media. It is expected that a number of these institutions will also develop a training and research program in this same area. The latter will need two or three faculty members specially trained in educational media administration, utilization, and production.

Educational media specialists going into schools and teacher training institutions will be concerned with the preparation and use of materials for organized or "captive" audiences in either formal or informal educational situations under the control of a teacher or group leader. The same conditions of use and preparation of educational media exist in many other fields. For this reason, a limited number of schools of education are offering a planned program of instruction for students from other schools and departments who are interested in careers as educational media specialists in health, agriculture, conservation, industrial training, or religious education. These students will be able to use to advantage the same competencies as the school coordinator and supervisor who work with teachers and community groups.

Service courses are also needed in the use and preparation of educational media for prospective teachers in schools of education and for students in other schools and departments who will be concerned with the communication of knowledge in their area.

Level of Training

A number of institutions either have or are planning training programs on the master's, the specialist's, and the doctoral levels. Only a limited number of these institutions, however, are offering a systematic program of courses on the undergraduate level. In order to meet the needs for school coordinators in educational media or instructional materials, I believe we should offer a minimum undergraduate program. Also, this program would serve as an orientation for students interested in educational media as a possible area for careers or for graduate study. Because students tend to take graduate work in their major or minor area, the offering of a minor on the undergraduate level would increase the number of students electing educational media as a minor or major on the graduate level. Moreover, graduate work should eventually be based on a minimum of two or three undergraduate courses if we are to provide a reasonable level of competencies on the master's level.

The Indiana State Committee on Audiovisual Certification believes that a minor in audiovisual communications should be approved for certification and graduate purposes. We are recommending for approval to the Teacher Training and Licensing Commission of the

Indiana State Board of Education the following patterns of preparation:

> A candidate for the audiovisual school building coordinator, provisional, will present credit and qualifications approximately as follows:
>
> 1. A baccalaureate degree.
>
> 2. A curriculum preparing for a provisional secondary teacher certificate with a minor area of 24 semester hours of credit in audiovisual communications.
>
> 3. This curriculum shall include a minimum of eight semester hours of credit in audiovisual education.
>
> 4. A minimum of six semester hours in the behavioral sciences.
>
> 5. Electives in cognate areas, such as library science, radio, television, speech, theatre, journalism and fine arts; behavioral sciences; or additional audiovisual courses to complete the required minimum number of hours for the area.
>
> The credits presented in audiovisual education must be distributed so that they give the student an understanding of selection, organization, and utilization of audiovisual materials, preparation of teaching materials, and management of audiovisual materials.
>
> For the first-grade certificate, the requirements are five years of successful experience and a master's degree.

Representatives from other professional and academic areas have responded favorably to our proposal for a minor area of audiovisual communications. The program has been designed to provide competencies needed by a teacher (a) whose primary concern is the effective use and preparation of educational media for the improvement of instruction, (b) who plans to specialize in the area of educational media within his subject area or grade level, and (c) who is interested in serving as a school building coordinator of educational media.

Organization of a Training Program

There are several different approaches to the organization of applied courses in the areas of the use, production, and administration of educational media. Some leaders (8) support an integrated or merged program; others (3) believe that we should have course programs in each of the fields, such as audiovisual communications, library science, radio and television, and also combined programs of one or more of the above fields for persons wishing to specialize in the broad area of educational media or instructional materials. In some respects, this is comparable to a general science teacher taking the basic courses in three or more science areas.

Another concern is the introduction of students in educational media programs to the rapidly developing field of communications theory and principles. The program of courses in this area would draw on communication content in the areas of sociology, psychology, anthropology, and linguistics. Since it is difficult for students in education to take a sufficient number of courses in order to obtain the communication content in these disciplines, some schools of education are planning a sequence of courses in communications as an integral part of the training program in educational media.

Research

Programs of research in the field range from studies on the master's level to an institute in research with a full-time staff. The volume of doctoral level research should increase and the quality should improve under the small grants program of Title VII. There is a great need, however, for more research activity by faculty members on a part-time basis through the assignment of time by the institution or through grants from agencies providing funds for these purposes.

As research programs grow and develop, there will be a tendency for faculty members in an institution to focus

their own energies and those of their students in defined research areas. For example, at Indiana University one of our staff members and his students are concerned with the particular strength and special uses of the iconic sign in the communicative process. He has suggested in a memorandum to faculty members and doctoral students that, "Broadly, I am interested in a general science of signs (semiotic). More narrowly, I am interested in that class of signs that might be designated 'iconic' or 'analogical.' ('Nonverbal' is a 'near' synonym, but an imprecise one.)"

Another faculty member and his students consider instructional communications research as their area of interest. He defines the area as "that aspect of the emerging discipline of communications which is concerned with the development and application of communications theory to 'digital' (word, number) and 'analogical' (picture, model) stimulus information, and the techniques of presenting and programming such information to structured, immediate-feedback communication 'systems' (pupil-machine; teacher-pupil; trainer-trainees; etc.)"

Administration of Training Programs

There are widely divergent opinions concerning the desirability and feasibility of integrating training, research, and operational programs in the educational media area. In some institutions, the professional educational program and the various campus and off-campus educational media activity operate on a relatively independent basis with self-contained staff, equipment, and plant facilities. Other institutions believe that the long-term development of a broad program of professional education and research as well as satisfactory on- and off-campus services in educational media can best be achieved through administrative, physical, and financial integration of staff, materials, and equipment resources (4, 5). These institutions are following the analogy of an integrated school of medicine and medical center with faculty members dividing responsibility between teaching and the treatment of patients in the area of specialization.

There are also different points of view concerning the location of media training programs within the university or college. A number of institutions are organizing a college of communications. In most cases the primary emphasis is on the use of media for (a) dissemination of news and general information, (b) advertising and promotion, and (c) entertainment. On the other hand, the primary concern of the program in the school of education is on the use and preparation of media for instructional or educational purposes with captive or organized groups under the direction of a teacher or group leader. It seems likely, therefore, that even though a university has a college of communication there will be a need for an educational media training and research program in the school of education.

References

1. Brooker, Floyde E., and Welch, Mary C. "Looking Back at Okoboji." *Audiovisual Instruction* 1: 202-03; Dec., 1956.
2. Hyer, Anna L. "Setting the Proper Keystone." (Editorial) *Audiovisual Instruction* 4: 284; November 1959.
3. Larson, L. C. "Coordinate the AV Way and the Library Way." *Educational Screen and Audiovisual Guide* 34: 252-53, 267-69; Summer 1955.
4. Larson, L. C. "Developing an Integrated College Audiovisual Program."

Phi Delta Kappan 38: 211-21; February 1957.

5. Larson, L. C. "An Integrated Approach to Film Production Training and Research." *Journal of the University Film Producers Association* 10: 3-6, 9; Spring 1958.
6. Larson, L. C., and Cohen, Edwin G. *Directory of Graduate Programs for the Professional Education of Audiovisual Supervisors, Directors, and Building Coordinators.* Washington, D. C.: Department of Audiovisual Instruction, NEA, 1955. 31 p.
7. Miller, Neal E., and others. *Graphic Communication and the Crisis in Education.* Washington, D. C.: Department of Audiovisual Instruction, NEA (Published as Vol. 5, No. 3 of *AV Communication Review*), 1957.
8. Shores, Louis. "Union Now: the AV Way and the Library Way." *Educational Screen and Audiovisual Guide* 34: 112-15; March 1955.

SECTION III

Contributions from Fields Within Education and Social Science

PROVOCATIVE QUOTATIONS FROM THE SEMINAR DISCUSSIONS

Curtis Ramsey

"The curriculum begins when the teacher closes the door and faces the class, unless you are going to dispense with the teacher entirely. I say this is still true and that you must look at how you are going to work with that teacher, how you are going to administer, supervise, and upgrade inservice development. These are basic considerations for the training of an audiovisual person."

Burton Paulu

"This ideal audiovisual man you are looking for, certainly before he gets his doctor's degree, ought to understand the mass media applications of the electronic media. The three areas that I think we have been neglecting have been the areas of the historian, the political scientist, and the economist. I am surprised that one can think of a really comprehensive school of communication which doesn't do a good deal about that."

George Gerbner

"We have to develop a professional philosophy with a code of ethics, some system of standards or value judgments that we can point to and say, 'We not only know that ideas have consequences, but we are prepared to conduct our activities in the light of our understanding of these consequences'."

Armand Hunter

"In order to become professional in the fullest sense of the term, we have to go beyond concern with the process, the impact, the effect, or the form in which the message is put. As scientists, and in developing a profession in the fullest sense of the term, we must be concerned with the true validity and adequacy of the propositions contained in the message or in the communication. In this respect it seems to me that we are sometimes completely cut out of any opportunity to develop professional status and recognition. The subject-matter specialist, so called, relegates us to a purely formal communication procedural role and function. In other words, the subject-matter specialist makes the "value" judgments in dealing with the content. The audiovisual specialist must then perform actively in relation to the content specialist in the day to day job of assessing the kind of proposition and its validity, and he has to make these value judgments along with the subject-matter specialist. I don't know whether I have made myself clear or not, but I see us caught constantly in a situation where such "value" judgments are absolutely essential for us to make in order to develop a true professional status and position."

Paul Witt

"I'd just like to suggest that not only the educator and the communication specialist but also the nurse, the administrator, and all specialists in our society really need to be grounded in sociology, anthropology, psychology, political science, economics, etc. We have a big enough problem on our hands—I'm not suggesting that we take on a larger one. But some place along the line in the total education scheme, we need to have a liberal education for professional education so that when these people get their Ph.D.'s they don't have to start at the very bottom in all of these supporting disciplines.

George Gerbner

"One of the serious effects of mass communication conflicts is that we are forced to write history before it's made. We are forced to interpret the present in a historical mood. But there's no time. Yesterday's newspaper lines our garbage can before we have a chance to even understand it or put it into any kind of perspective. Every day we have to structure and restructure this thing as if we were historians of

the moment. Not solely for purposes of historical accuracy but in order to determine what tomorrow should be like."

Melvin Brodshaug

"I want to call attention to one dimension of communication which is a little different . . . many innovations suggested and put into operation in schools today do not come out of the professions but from people on the outside. Now this is not new. This has been going on for a century, or probably longer. It is parents, usually, who have made, or who have demanded, most of the changes in public schools over the last century. Not the teachers! Not the administrators!"

F. G. Macomber

"There are a lot of possibilities for the use of television in some of our mass teaching. We can relieve teachers for parts of the day when they will have a chance to do some creative work on some other things. Because there are some things that you can teach and teach pretty well by mass instruction. And there are a lot of things we haven't any business trying to teach by mass instruction."

OUR DEBT TO EDUCATIONAL PHILOSOPHY

A. W. VanderMeer

BEFORE ADDRESSING MYSELF to the question of what specific contributions to the professional education of the general audiovisual specialist can be drawn from fields within education, it is necessary to list and comment briefly on a number of assumptions.

The first is that there is a unique and hence a definable field of education from which such a specialist as the audiovisual administrator, instructional materials coordinator, etc. can draw for his professional preparation. Perhaps there is no question about the validity of this assumption in view of the fact that in such universities as my own something like one-half of the advanced degrees conferred are degrees in education. The assumption can, however, be granted only if it is understood that professional education is largely an *applied* field. Education is a discipline only as process, as a comparative study of institutions (present and past) which have been established to discharge responsibilities for education, and as a body of applications of other disciplines such as psychology, philosophy, sociology, and so on. The question of when educational psychology ceases to be educational psychology and becomes psychology, and parallel questions with respect to the other supporting disciplines of education, are indeed difficult to answer.

The second assumption is one which, if not granted, makes us all a little silly for being here discussing the subject of this seminar. That assumption is that there is and ought to be such a professional educationist as the general audiovisual specialist and that he needs special training. Something about the term "general specialist" strikes me as not quite right regardless of the interposition of the term "audiovisual" between the words "general" and "specialist." Nevertheless, there are actually jobs to be done in the business of educating children and youth that it is safe to say can be done better if certain things are known and applied. Among these jobs are the administration of audiovisual services, the procurement, selection, and distribution of instructional materials in

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Original title of this paper: "What Specific Contributions Can Be Drawn from the Fields Within Education as Content for the Professional Education of the General Audiovisual Specialist?" See list of participants on page 5 for author's affiliation.

educational units of varying sizes, and the production of instructional materials.

I cannot but note in passing that one of the big names in the audiovisual field, James W. Brown of San Jose State College, remarked to me in 1940 that one characteristic of a good audiovisual man was that he worked himself out of a job within a few years. Perhaps we ought to question the extent to which professional training programs should be supplied for individuals whose object it is to work themselves out of a job. Maybe their training should be highly general rather than highly specialized.

The foregoing thought leads to another consideration which might be labeled a "nonassumption"; namely, that any *specific* pattern of graduate training should be based upon the suggested contributions from various disciplines which will follow. To be sure, most graduate degrees granted to individuals whose professional aspirations led them to the audiovisual field are granted by or come from training supplied in colleges and departments of education. I would not insist that this is necessarily the best source of graduate training in every case. Much less would I wish my remarks to be interpreted as a suggestion that a specific pattern of courses should be placed in a sequential order and identified as *the* program leading to an advanced degree in the audiovisual field. In other words, in this talk I am concerning myself only with those things which might properly be considered *elements* of graduate training.

The final assumption is that the academic preparation of the general audiovisual specialist is a graduate rather than an undergraduate program, and that the program is based on a sound undergraduate program in some aspect of *teacher education*. If this assumption is granted, it is expected that every candidate will start with a reasonably thorough knowledge of some academic field, a broad foundation of general education, and the rudiments of professional education such as the social and psychological foundations of education, methods of teaching and measurement of learning, and practical teaching experience.

Academic Preparation

At least three elements should be present in the graduate program leading to the highest order of academic preparation of the audiovisual specialist. First, there are those technical skills and knowledges, buttressed by appropriate attitudinal learnings, which are immediately associated with the kinds of duties that the general audiovisual specialist performs. You are all familiar with the examples—how to make a sound motion picture, what characteristics to look for in selecting a filmstrip to teach a given concept to a given group of children, how to operate and maintain equipment, and so on.

The second element is that of general *educational* scholarship. The audiovisual specialist should be able to interpret the educational process and the schools to other educationists and to the lay public. He should be able to give historical, philosophical, sociological, and psychological reasons for doing things as they are done, both in his own area and in education in general.

The third element in the training of the *general* audiovisual specialist is that of general scholarship. I would not accept the dictum that the audiovisual specialist must *first* of all be a scholar, but I would insist that he have scholar-

ship in some special and preferably related field as one of the three primary characteristics of his training which are, to repeat, special knowledge in audiovisual, supportive foundational knowledge in education and psychology, and finally, general scholarship.

I shall address myself to the second area in this talk—that of supportive foundational knowledge. To describe the special training for the general audiovisual specialist would be carrying coals to Newcastle, and highly presumptuous, too.

Four areas of education lend themselves to making contributions to the graduate preparation of the general audiovisual specialist. These are educational philosophy, educational psychology, educational administration, and supervision and curriculum. Of these, the most neglected is educational philosophy. This is amazing to me because in an age of science such as that in which we live, rational thought which seeks reasons for doing things as we do them should be of paramount importance. Yet no one who has really studied the *scientific* literature in education can fail to be impressed by the fact that the number of questions and considerations for which we have verifiable and replicatable answers is greatly exceeded by the number for which our answers are at best based upon tenuous reasoning and on inadequate data. At worst, the answers to many educational questions are erroneous or completely nonexistent.

Butler has recently written an excellent book entitled *Four Philosophies and Their Practice in Religion and Education*. With a grateful bow in his direction I shall list a few selected elements of each philosophy he deals with and attempt to illustrate the importance of this field as a source of education for the audiovisual specialist.

Naturalism

Naturalism holds these tenets to be among the most important:

1. Maturation and growth of the child are determiners of the educational process. If natural processes are fundamental, then educational processes must be in keeping with natural processes. Thus both the content and method of education should take primary account of the developmental status of the learner and should consider, then, how the individual learner learns.

2. Education should engage the spontaneity of self-activity of the child. Put vulgarly, education should capitalize on having the child learn through "doing what comes naturally."

3. Inductive rather than deductive methods should characterize all teaching. The learner should discover knowledge for himself from experience rather than having it presented to him as an abstraction of the experience of the race or of other people.

4. Motivation should come from the learner's insight into the natural consequences of all his acts. Punishment should take the form of unpleasant consequences which flow naturally from errors and omissions in behavior, and rewards should likewise be related to the satisfactions that come as natural consequences of learning. By contrast, extrinsic motivation should be eschewed.

Idealism

The second philosophical syndrome dealt with by Butler is that of idealism. Idealism stresses first of all the importance of the teacher as an authority,

a friend, and a model of the good life. The teacher occupies a special place in the learning environment by virtue of his superior knowledge, character, and intellect. Secondly, imitative activity is a prime factor in the learning process. The acceptance of a model to emulate in terms of character, personality, mode of attack on problems, etc. is central to the learning of the child. Thirdly, emphasis is put on the active responses of children. Learning takes place only through interaction with the environment and through identification with it. Fourthly, education consists of much more than learning facts. It consists of self-realization in the areas of thinking, feeling, and behaving. Finally, direct firsthand experience is essential. Intimate contact between the learner and his environment is a prerequisite to all learning.

Realism

Realism as a philosophy in education has been enunciated by Comenius, Herbart and, more lately, Broudy. The realist, says Butler, adheres to these basic tenets:

1. There is a body of knowledge which can be defined and which is essential to the complete education of the individual. This knowledge is not necessarily important of itself, but in the way that it serves to help the individual develop his mental powers and his abilities to deal with himself and the problems of the world.

2. The felt needs of the individual may differ markedly from his real needs. Teachers are the best judge, not only of what these needs really are, but of the content and methods most appropriate to satisfy them.

3. The greater proportion of human activity takes place in terms of meanings rather than events. Meanings may be manipulated, combined, and reorganized; events may not. Abstraction is the process whereby events and meanings are reconciled.

4. The curriculum of the common school should neither be subject-matter nor project centered, but should rather be a means of forming good habits. Habit formation to the realist is not a process of developing unthinking reactions; it relates to research skills, habits of study, habits of critical thinking, and so on. Subjects give substance to these habits, and ways of believing and operating are therefore, partially at least, instrumental in achieving the aims of education. But they do not constitute these aims.

Pragmatism

Pragmatism as a philosophy is considered by most writers to be the prime basis for the educational system of the middle twentieth century. Basically, pragmatism holds that:

1. Individual differences among learners are central in the educative process. These differences may be multiple and complex ranging from social and ideational factors to general abilities and to specific ones such as verbal ability, spatial-perceptual ability, numerical reasoning ability, and so on.

2. Learning consists largely of problem solving. Motivation for learning comes from feelings of inadequacy and/or the drive for closure that confronts the individual when he perceives an unsolved problem or an unanswered question.

3. Man is a social being; therefore, the importance of group work and group decision is to be stressed.

4. Incidental learning is of prime importance. Information is not useful of itself but only as it is instrumental or functional in solving problems. Knowledge that is frequently used to solve problems will be learned incidentally as these problems are dealt with. Methods of reasoning, study habits, ways of behaving as a member of a group and as an individual will be learned in the same way; that is, incidentally as problems are solved. Finally, learning, study habits, and other modes of behavior will be valued to the extent that they seem to be related to satisfactory solutions of problems.

It occurs to me in the preparation of this paper that the previous few moments may sound like an overview for a first graduate course in educational philosophy. I do not mean in any way to imply the necessity of such an outline of philosophies as I have just presented except as a framework for indicating that basic to the preparation of the audiovisual specialist is an understanding of the beliefs that may be held by the teachers and the administrators with whom he works. Of course, not all teachers who practice a particular philosophy are aware of the fact, much less are they necessarily aware of the name that educational philosophers have attached to the syndrome of beliefs that motivate their actions. However, the fact that most teachers and administrators may not be able to state succinctly their philosophical beliefs or, much less, identify their origins is quite irrelevant to the task of the audiovisual specialist.

The audiovisual man makes his living by trying to get teachers and administrators to do things the "audiovisual way." He is committed to this way as being the most effective means of teaching, yet it is obvious that certain practices that are "doctrine" in the audiovisual method must be incongruent with or even anathema to certain of the philosophies that I have mentioned as being the primary ones held today. May I illustrate? All of the so-called mass media are *group oriented* audiovisual materials. Those who hold to the naturalist and the pragmatist philosophies are not likely to see much good in these types of materials, for they believe fervently that what the child learns must be intimately related to his particular status in maturation and growth. Since children differ widely in this respect, it would be difficult if not impossible for these philosophies to justify gathering together a large group of children to show them a moving picture or to present them with a television program. On the other hand, to realists and idealists who believe that a certain body of knowledge is instrumental to the development of a common attribute of learners, group teaching techniques would seem a most reasonable approach.

The idealist makes much of the teacher as a model. One reason for the extensive use of educational television is that it has values as an inservice training device. The assumption is obviously that certain teachers will improve their techniques by accepting other teachers as models for imitation. If you reject the idea of the teacher as a model—and you would if you were a naturalist or a pragmatist—you must logically reject imitation as a central factor in learning and you must also reject, at least to some extent, this aspect of educational television.

If you hold with the naturalist that inductive methods are the most important you will decry, as many writers

already have, the kind of motion picture, filmstrip, workbook, etc. which "gives all the answers and leaves nothing for the child to discover." If, on the other hand, you hold with the realist that there is a necessary shuttling back and forth from abstraction to firsthand experience you will be willing, and in fact *prefer,* to select instructional materials whose approach is more deductive. You will feel that the original EBF films leave little to be desired in organization. On the other hand, you may object, in part, to their emphasis on facts.

The instructional materials coordinator will recognize that his alternatives in gaining acceptance of materials and methods are either to select those which agree with the philosophical bias of his teachers and administrators, or conversely, through administrative and supervisory practices lead (or attempt to lead) the latter to a philosophy appropriate to the materials and techniques that he himself advocates.

One final example of how a philosophy determines practice and thus has an effect on the audiovisual man's job: The naturalist holds to the importance of intimate firsthand contact between the individual and his natural environment, and believes that education should engage the spontaneous self-activity of the child. The teaching of the pragmatist, to whom learning means problem solving, is characterized by much group work, group projects, etc. based on the felt needs of the learners. Both look with a somewhat jaundiced eye on films and TV. Both are overjoyed to have a large variety of materials at their beck and call in the immediate classroom. By the same token, these individuals who resist the necessity for scheduling films six months or six days in advance would insist that *at best* television is a resource that the teacher should be able to use when, in his judgment, it can make a contribution. Parenthetically, my observation is that the true naturalist or pragmatist rarely finds that television *can* make a contribution except in a purely accidental fashion. The audiovisual specialist in such a context would have to make sure that he planned his accidents carefully!

To Recapitulate

Perhaps to summarize what I have said about the contribution of educational philosophy to the training of the general audiovisual specialist, I can state the following: A knowledge of educational philosophy will help the audiovisual specialist understand why he is happy or miserable in a given educational environment. If he is professionally ill at ease, it will help him define the question, "Can I live in this particular school environment comfortably and if so what accommodations must I make?" In short, educational philosophy can make the difference between blind egocentricity and enlightened work with professional colleagues—with the people the audiovisual man serves.

Educational psychology, like educational philosophy, furnishes much of the basic fundamental information and methodology that is so essential in the training of the general audiovisual specialist. I am here defining educational psychology as primarily an instrumental subject which, in the eyes of most educational psychologists, may be a questionable definition. However, since we are concerned with the training of audiovisual specialists rather than educational psychologists, I do believe that

this definition can be accommodated, although I would not advise carrying too far the attitude that the educational psychologist exists to supply rules and principles on which the general audiovisual specialists and his fellow educationists can make decisions.

Here are some of the areas in which I believe understanding of the learning process and the learner can make a contribution. First, there is a body of information concerning the differential nature of the growth of the individual. This growth differential is typical not only of the obvious physical attributes of individuals but also of their emotional and intellectual ones. Information about maturation and growth has obvious implications for the grade placement of instructional materials and for the assessment of the appropriateness of various methodologies. In turn, such information has obvious implications for the selection of materials. Is it really possible, for example, that more than 50 percent of the motion pictures listed in the H. W. Wilson film guide are actually appropriate for three levels of education, i.e., elementary, junior high, and senior high?

A second element of knowledge concerning the learner and the learning process is that of the differential natures of abilities. The knowledge that people differ in such primary mental abilities as memory, verbal fluency, spatial manipulation, numerical reasoning, etc., is basic to the concept of *grouping* of students. (Too few teachers in schools using homogeneous grouping see the relevance of the question, "Homogeneous with respect to what?") Equally important is the knowledge that a given individual may exhibit widely differing capacities in the various mental abilities. While it is a rare thing that a mathematical genius is a verbal moron, the fact that an individual's abilities can rarely be plotted in a straight line is all too evident to those who have tried to teach engineering students the fundamentals of English composition, or artists the basic principles of calculus. Differentials in the various mental abilities have implications for selection of varieties of instructional materials, for grouping of students, and for selection of methods of use. A variety of materials is required for a class of varying abilities. Shall we make wasteful allocations of materials or shall we try to group learners more efficiently?

Differentials in the modes of reinforcement of learning constitute a third area of knowledge which is a vital element in the educational foundation of the general audiovisual specialist. Among these modes and principles of reinforcement are the learner's knowledge of results, the verifiability of information by the learner, the importance of repetition, the clarity of goal, and the differential effectiveness of reward and punishment. Each of these elements and others which have not been mentioned have several applications in the manner in which information is presented through audiovisual materials. They have bearing on the extent to which *method* is built into the audiovisual material rather than being assumed to be applied by the teacher, e.g., what should be the nature of introductions and summaries in motion pictures or, in fact, should they exist? Should the film be a mere presentation of experience or should it be organized so as to indicate its purpose clearly, demonstrate information, and provide for repetition through summaries and applications?

The fourth element central to the statement and clarification of educacational directives is the definition and description of the essential characteristics of various types of learning. The development of concepts, the nurture of perceptual skills and the reinforcement and restructuring of attitudes appear not only to call for different types and levels of abilities but also for differing methods and materials of instruction. We all recognize, for example, that although a clear understanding of the facts of racial similarities and differences may be logically incompatible with racial prejudice, individuals possessed of the facts often remain bigoted in outlook. It seems logical to suppose, then, that the most appropriate and effective materials and methods for teaching concepts might not be the same as those recommended for the reinforcement or restructuring of attitudes. How these materials should be different and how their use should be modified is within the province of the psychology of learning. An ethical question arises here, too. Should attitudes be built through frankly emotional appeals, or must only the rational approach be used?

Leadership Responsibilities

Thus far, I have spoken only about the impact of educational and developmental principles on the selection of teaching materials. Leadership in this area is certainly one of the prime responsibilities of the general audiovisual specialist. Equally important, however, is his obligation for leadership in teaching method, an area known in the trade as "utilization." Certainly the psychology of learning and the principles of human development are a primary foundation for answering questions of pedagogical procedure. The general audiovisual specialist should be able to quote "chapter and verse" to support his recommendations as to method; therefore, he must draw heavily from his training in differential and integral educational psychology and human development.

Not all general audiovisual specialists are administrators, but all *deal* with administrators. The field of educational administration is itself undergoing a radical change. Formerly it was based largely on analyses of duties and responsibilities and on a collection of studies of "effective practices" in performing these duties. The new educational administration stresses administrative theory and principle as applied to the educational enterprise. Administrative theory draws heavily from political science, economics, and sociology; thus we have an example of a specialist (the audiovisual man) turning to an educational "discipline" which is itself largely a borrower. There are a number of the "nuts and bolts" types of knowledge useful to the audiovisual specialist, of course. Among these are (a) the elements of budget making, cost accounting, and expenditure control; (b) building design, construction and maintenance; (c) school law, particularly that pertaining to financial liability, curriculum, and student accounting; (d) line and staff organization for school management; (e) public relations; and (f) supervision and deployment of professional and technical staff.

Information concerning these areas can be acquired by the general audiovisual specialist from courses in educational administration, but he needs more than collections of facts; for these may vary in their pertinence and applications from state to state and from com-

munity to community. The general audiovisual specialist needs, more importantly, principles in these areas. These he can gain from forward-looking programs of graduate work in administration. Such programs look to political science (or to business administration) for principles of line and staff organization, to political science for sources and bases of legislation affecting the schools, and for elements of public support and public control. They look to economics for principles relating to educational costs and the ability of the community to pay for education, for financial commitments through bonds and financing authorities, for tax programs, and for industrial, commercial, and agricultural relations. They look to sociology for principles of community organization, for status and power identification, and for population study and prediction. All of these things the audiovisual specialist needs to know or be aware of either in intimate operational detail or as general background.

The audiovisual man not only uses some of this knowledge in the direct conduct of his job of providing teaching materials, service, and leadership, but he also needs it in a capacity that he must fulfill if he is to be a true professional. That capacity is as an interpretive intermediary between administration and the teacher. He needs to understand for his own sake and, equally important, for the sake of his teachers why certain services or materials cannot be provided, why certain lines of activity must be pursued, others postponed, etc. Such understanding leads to acceptance, promotes efficiency, and stems from a clear understanding of administrative theory as theory and as it applies to a given school situation.

There is, perhaps, some question as to whether there is a field in education that is properly labeled as *curriculum*. There is also the question whether the general AV specialist is not, in reality, a sort of curriculum specialist himself. I would suggest that if he isn't, he should be, at least to the extent of a thorough knowledge of (a) what the curriculum consists of from kindergarten through high school, at the very least, and perhaps in collegiate and adult education, (b) the major techniques whereby changes are accomplished in curriculums, and (c) the general trends in curriculum. Obviously, the curriculum expert and the general audiovisual specialist will sit side by side in receiving foundational training in educational psychology and philosophy of education.

It is obvious that the audiovisual specialist needs to know what is being taught in order that he may help in the selection of materials. He should be aware, too, that the selection of materials has a powerful effect on what the curriculum becomes and how it develops.

Research and Evaluation

A final field of education important in the preparation of the general audiovisual specialist is research, measurement, and statistical procedures. Methods, materials, and practices must be evaluated. Educational philosophy will help in deciding whether a question is a proper one and so whether a practice should be evaluated or discarded, but once the decision to evaluate is made, armchair judgments must be tested by the best scientific means available. These means come from statistical theory for the treatment of data and testing theory for the procurement of data. The general audiovisual specialist cannot afford to

be unskilled or uninformed in either area if he wants to contribute to knowledge and to defend his beliefs with more than mere eloquence.

I have dealt in this paper with five areas from the field of education which I feel have important contributions to the education of the audiovisual specialist. Perhaps I shall have pleased no one except the specialists in the non-audiovisual areas that I have mentioned. Certainly the task of building in all of the elements suggested in this paper and by others who have spoken before me is an Herculean task for those who train or are trained as audiovisual specialists. To this I can only say, heroic feats are performed by heroes. To do the job of the general audiovisual specialist is indeed an heroic task.

LET'S PUT THE HUMAN ELEMENT BACK IN

George Gerbner

PONDERING THE NATURE and occasion of my assignment, I made some enlightening discoveries. "Seminar" comes from "seminarium," as does "seminary," which used to mean "seed-plot" or nursery where something is cultivated, as in the stark example offered in Webster's: "slums are *seminaries* of crime." "Invitation" used to mean "treat as a guest, entertain." Alas, its meaning has changed to the act of asking a person "to come somewhere or do something"; also to allure, entice, or tend to bring on, as in another gratuitous sample (I had never realized what lurid literature Webster's really was): "Such talk *invites* scandal." Obviously, an invitational seminar 2000 years ago would have entertained us in a garden of culture; today it lures us into scandalous talk in a hotbed of vice.

Next I turned to clarify the meaning of my topic. I found "social science" defined with simple elegance as "the study of people and how they live together." Equally incisive, although much more sobering, were some definitions of "professional" such as "a person who makes some activity not usually followed for gain . . . the source of his livelihood," or "having much experience and great skill in a specified role: as, a *professional* rabble rouser," or "avowal, whether true or pretended." Looking for some reassurance, I turned to the article by James D. Finn which launched AVCR (5). There I found a more attractive image of the audiovisual professional: he is a highly-trained intellectual technician with a strong sense of values, working in close association with other members of his profession, guided by theory, expanding with research (and, I suppose, age).

Then I proceeded to get to the root of the matter of professional education in audiovisual. Just as I got to the root, I was reminded of the Russian fable (retold by Edgar Dale) about a pig who ate his fill of acorns under an oak tree and then started to root around the tree. A crow remarked, "You should not do this. If you lay bare the roots, the tree will wither and die." "Let it die," replied the pig. "Who cares as long as there are acorns?"

Well, having had *my* fill of acorns, I thought it quite fitting to the spirit of

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Original title of this paper: "Social Science and the Professional Education of the Audiovisual Communication Specialist." See list of participants on page 4 for author's affiliation.

the occasion to root around the tree—but for a different reason. My thesis is that the tree is suffering from mineral deficiency, and that perhaps a direct transfusion of social science might revive it. I don't mean just the injection of a little learning theory here, some applied psychology there, and a sprinkling of communication research on top. I mean a redefinition and reorientation of AV professional training as the social science of educational mass communication in and out of school. You can see that I take my Webster's seriously and propose to overstep, scandalously, what ordinary prudence might suggest to be the terms of my assignment. But it seems evident to me that the *professional* education of the audiovisual communication specialist will either have more to do with "the study of people and how they live together," or it will wither away and die, pigs or no pigs.

I would like to elaborate, then, the reasons and evidence for my thesis. I will argue that a social science orientation is a necessary condition for the professional as well as academic respectability of an increasingly technological discipline. And I will attempt to sketch some aspects of that orientation.

When acorns still cover the ground and many more are to be seen on the branches, why do I say that the tree is lacking some vital minerals? My first reason is the inability of professional leadership in audiovisual to assume a central organizing role in the rapidly developing field of communications study, teaching, research, and scholarship. This field owes much to the pioneering efforts of a few educators. Certainly no other discipline has a more direct stake in the human outcomes of the communications revolution. Why then did audiovisual education not assume leadership, or at least the role of catalyst, in the emerging field of communications? Harold D. Lasswell posed the same question recently and found schools of education "disqualified by academic resistance from performing a successful interdisciplinary role." Paying tribute to educational accomplishments in the field, he concluded that "it was difficult to establish effective working relations with the central corps of university work in the social sciences and humanities" (13).

The second and related reason for my diagnosis is the state of organized professional education in audiovisual. According to the figures collected by Robert deKieffer (3), the percentage of AV departments, graduate programs, and recognized majors and minors fell significantly in the past 10 years. But more important than numbers are the reasons given by most colleges and universities for establishing, or not establishing, such programs. By far the major single reason for their establishment has been political—namely, state certification requirements. And by far the major obstacle to their establishment has been that sure sign of "academic resistance": faculty apathy.

Our communications problems in and out of education increase in magnitude. The need for and promise of the study of communications as a social science enterprise commands increasing attention and respect. But professional education in audiovisual cannot lead this academic procession because it is barely a part of it.

Now the glitter of academic respectability is not all gold. But at its best and only worthwhile form it is a hard-earned commodity. And it is an essential re-

quirement for attracting and developing able men and women.

You can organize a field, but *professionalize* only a discipline. Audiovisual education is a sprawling field of busy activity. But it lacks both the intellectual discipline and the social value orientation necessary for a profession.

AV educators are the unstable occupants of a three-legged stool with two legs braced to support the growing burden but the third collapsing under our weight. Historical necessity and the technological means available form the two sturdy legs. The first, the need for rapid and efficient mass communication and training brings increasing responsibilities and even financial support, at least on the national scene. The second, a snowballing series of technological revolutions in communication, takes us on an imaginary joyride into outer space where no terrestrial nonsense enters into the automatic application of technological "solutions" to social problems. We were able to balance on these two legs more or less successfully only when singleness of purpose and community of national goals made the application of technology to rapid mass training a relatively unambiguous goal, a situation most characteristic of our society in wartime. But problems of knowledge, education, and technological mass communication become much more complex when questions of *how* cannot even be discussed intelligently without first raising the question of *what* and, even more importantly, *for what?*

That is the tottering third leg of the stool. What is the conceptual rationale for the discipline? What is its conception of the social roles and responsibilities inherent in communication innovation?

The conceptual rationale most widely held by AV practitioners is not a rationale at all but a rationalization. "Abstract verbal labels" may be empty without "rich sensory experiences" (although no worse than the other way around); but the mechanical application of the dubious dichotomy between the "abstract" and the "concrete" to the ordering of media and channels of communication into a hierarchy is a ritual which—as indeed the very name of the tribe—blocks attempts at clear thinking.

The conceptual foundations of the discipline *can* be built on the study of communications in the learning process, and on the analysis of its interactions with social and technological change. This means a redefinition and reorientation of professional education in audiovisual as the social science of educational mass communication. Anna L. Hyer recently suggested that the foundation of the audiovisual profession is in the psychology of learning, and that the principal roles of the professional are those of "curriculum agent," "change agent," and "learning agent" (11). I would broaden this somewhat. While the analysis of the role of the *communication process* in learning is relevant to the tasks of the profession, so are the scrutiny of communications *needs* and *resources;* the study of communication *systems* and their role in education, society, and popular culture; and the study of *utilization* and *administration* in the light of some professional philosophy. Our "highly trained intellectual technician with a strong sense of values" needs to be versed in the sciences, art, technology, and organization of communication activities, and needs to be oriented toward some normative concepts regarding the humanizing role of

communication in social life. (Later I will indicate what these terms mean to me.)

The materials necessary for a reorientation of learning in professional audiovisual education either do not exist, or are so scattered both in terms of location and of orientation as to be virtually unavailable. Perhaps the first task of professional leadership in the field might be to sift, synthesize, develop, and focus social science materials in the direction of educational communication theory and practice.

I don't think much can be done until that basic job of intellectual leadership is well under way. I don't think the contributions of social science can be economically harvested by sending students into a dozen standard social science courses during the time of professional preparation. I hope that the interdisciplinary cooperation apparent in this seminar can be extended to continue the job of structuring and development.

Communication Process in Learning

Perhaps the most obvious area in which recent developments in social science might be integrated with current materials is the analysis of the communication process in learning. A number of theoretical models, recently summarized by Bettinghous (1), have been proposed to help in this analysis. Osgood's theory of meaning and its measurement (14) has contributed tools to the study of the connotative aspects of communication. The continuing work of Hovland and his associates would have considerable relevance to the production and utilization of materials involving attitude change.

Recent contributions to a theory of encoding behavior and of perception are too numerous to name. They come from psycholinguistics, psychology, social psychology, cultural anthropology, information theory, art theory, and other fields. Study of small group communication networks and interaction, and of reference-group theory continues to offer insights relevant both to interpersonal and mass communications. The two-step flow of influence hypothesis of Katz and Lazarsfeld is likely to give way to a more complex, many-step flow hypothesis in the light of new studies. Content analyses in terms of effectiveness is being supplemented by source-oriented approaches (15) as well as those inferring social and cultural dynamics from the study of content (9). Some basic notions about the nature of communication effects have been challenged, or at least refined, by Festinger's theories and studies. Behavior may be more adaptive than ideology; attitude change may follow as well as precede behavioral effects; relevance of the communication or its salience to group norms or tasks may be determinants of response as critical as prior agreement.

I trust that other members of this symposium better versed than I am in many of these areas can amplify and supplement these random suggestions. I would like to go on to mention some much more neglected aspects of social science in professional education. It might be that in the long run extreme preoccupation with techniques for achieving slight (even though "statistically significant") margins of effectiveness will prove to have been myopic. We are probably still at the beginning of an era of vast communication systems whose social consequences are by no means perceived or accounted for in terms of test scores. What are the social

and technological imperatives of this era? What are their implications for the structure of authority, of freedom and control, of power and the integrity of knowledge? Too few people think deeply enough about these questions in ways that would be meaningful for professional education. Most of those who do are here with us today. Others who come to mind are Edgar Dale, Gilbert Seldes, Charles Siepmann, Robert Lewis Shayon. The only person I know who is developing an approach to the political economy of communications is Dallas W. Smythe (17).

I do not think that familiarizing students with experimental and survey research findings in social science (necessary as that might be) helps them solve most professional problems. Research information is most useful in increasing the range of alternatives apparent to the policy-maker, and indicating probable consequences attached to these alternatives. But when all is said and done, policy decisions are value judgments based on weighing alternatives and consequences in concrete and specific situations, and on the price of making changes for the sake of probable rewards. Here there is no substitute for historical analysis, social theory, and professional philosophy. Let me speculate briefly about each of these.

Historical Analysis

What contribution can the historical view make to the professional education of communication specialists? If we take history to be the study of the origin and development of social problems, issues, and ways of dealing with them, the historical view is essential to professional insight. The historical view of a discipline is often narrowed to understanding events, people, and places that figured prominently in the "movement." This should be broadened, I believe, to accomplish three major objectives: (1) to clarify the conceptual and intellectual legacy of the field; (2) to establish the *rationale* for the existence of the discipline as contrasted with *rationalizations* concocted to justify practices, organizations, and budgets; and (3) to enable practitioners of the profession to assess their stand and their function in the social processes of the day.

No such history exists in the field of audiovisual communications. Some contributions have been made by such a diverse group of people as Brooker (2), Hogben (10), Innis (12), Lasswell (13), Saettler (16), and Jim Finn, Marshall McLuhan, and others at this seminar. But the particular synthesis needed to provide depth to a professional grasp of concepts, rationale, and social relevance has not been achieved. What kinds of social insights might be hidden behind the facade of chronology?

The development of the phonetic alphabet was a technological innovation comparable to the digital computer. It helped liberate man from mythical empiricism (a sort of primitive audiovisualism). It also prepared the stage for the class-bound dissociation of the learned from the popular (mostly oral) culture. But the "Gutenberg era" bridged the gap. This had explosive consequences. Comenius, sometimes called the "father of visual education," advocated the idea of universal popular education through print in an era of almost universal illiteracy. His dream of the Christian Republic (motivated by religious dissent) was founded on the social ideal of small farmers, merchants, property owners acting independently,

their equality limited only by natural capacity to cultivate and enjoy the fruits of industry and talent. A century later Rousseau—another "father of modern education"—saw this ideal crushed by plutocracy on one hand and impoverishment on the other. The child must be *protected* from books, he said, as from all other evils of society until he develops through "natural activities" his powers of resistance. Even then the curriculum should begin with that document of economic individualism and self-reliance, *Robinson Crusoe*.

Social Theory

Behind the conceptual history of educational and communications developments is the constant interaction with conditions of life, institutional structure, and social change. The first modern theories of public communication, using concepts such as "public opinion" and "mass mind" arose, as Lasswell noted, "as part of the great counterattack . . . against planned, revolutionary, and drastic social change—in a word, against the French revolution" (13).

In our time the industrial revolution shifted into the communications stage. Communication processes became mechanized and their products mass-produced. New media arose to transmit messages and images across boundaries of time, space, and class. Cultural communication industries, instruments, and processes created new networks of influence, audiences, markets, institutional empires—and educational devices. Bigness, fewness, costliness brought centralization of control, standardization of product, streamlining of technique. Large and intricate systems of all kinds demanded new ways of data processing, information transmission, storage, retrieval, and decision-making. Increasing penetration of mechanized communications into every sphere of life brought new delights and raised new concerns. Soon the technological avalanche will have to be pressed into the service of creating the growing army of its own technicians.

A thousand years ago there was a standard formula for the "solution" of most social problems. It permeated communications content, method, and point of view. The formula was "get more slaves." The essence of a thousand years of human productive progress can be summed up in the new formula: "build more machines." But the new formula is no more a matter of simple "application" than the old was. A new folklore has arisen to symbolize our anxieties about it and, characteristically, most of it revolves around communications. Suspicion surrounds a variety of occupational roles in communications which serve mostly to implement, to apply, and to carry out the demands of business and industrial technology; rarely to question, to scrutinize, to reflect upon human and social consequences, or to resist when professional responsibility might demand.

I would not want the educational communication specialist to join our symbolic rogue's gallery of "professional" implementers, appliers, persuaders, and manipulators. I would not like him to think that the application of a "communication approach" or technique can solve any major problem in industrial society. On the contrary, I would like him to understand that communication systems, technologies, and even theories are an *integral part* of our social problems; that what we need is not a "com-

munication approach" to society but a social-scientific and human value-conscious (i. e., truly professional) approach to communications. In sum, I would like him to know that the "communications revolution" of our time is part of a series of concrete historical developments and approaches whose nature and relevance to social change and human welfare his profession can and must assess.

Professional Philosophy

This brings us to the potential contributions of social theory to the professional education of our communication specialist. Here such ideas as those of Robert K. Merton, Leo Lowenthal, William H. Whyte, David Riesman, C. Wright Mills, Arnold Hauser and others working in the sociology of knowledge, art, institutions, and the cultural process can be helpful. But, again, the necessary body of literature does not exist. My basic point of departure into the field of social theory has been described by Finn as being "the greatest educational dilemma of our time" (7). The horns of this dilemma are the increasing need for responsible citizenship and the demands of a technological society for specialists. Finn said: "If these two objectives come into complete conflict, a technological society, in order to survive, has no choice but to pick technology. We may not like the world we so create . . . but we must recognize it for what it is."

I recognize it for what it is and I *don't* like it. Not because society "picks" technology (a matter in which it has no choice) but because I have no interest in the survival of the kind of technological society which comes into complete conflict with the values of responsible citizenship.

Professionals cannot serve as executioners of the "inevitable." Part of their task is to be, when necessary, "fighters against their times." Social theory in professional education illuminates the probable consequences of the "inevitable" and helps develop reasonable alternatives. The historic opposition between technology and social responsibility is no longer a reasonable alternative. Technology is never only technology. Technicians are the advance agents of social change whether they know it or not. Professionals ought to know it, and to *profess* what they know. That means, according to Webster's, "to avow publicly."

Now that I have used Jim Finn out of context as a foil, let me put him back into context to make my point. In "A Look at the Future of AV Communication" (6) he wrote:

> I submit that it is our job to be concerned about the content and philosophy of the materials we use in the future . . .
>
> If we are on the side of mankind; if we believe that the future must contain *choices* [my emphasis], we must, in the future, defend the freedom of audiovisual communication and see that the materials contain, insofar as it is possible, all knowledge, not a perversion of it.
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> . . . The problem of knowledge is one of the greatest our society must carry into the future; it is an absolute social necessity that we begin now to apply audiovisual techniques to aid in its solution, and to protect its integrity.

Here we come to what I called earlier the normative professional concepts regarding the humanizing role of communications in social life. These concepts are rooted, for us, in the problem of knowledge.

Collaboration, community, and communication make human beings out of Homo sapiens. The unique social func-

tion of communication in this process involves learning about and judging a real world. That is what knowledge means in communication terms. As N. R. Hanson wrote in his *Patterns of Discovery*, "... knowledge of the world is not a *montage* of sticks, stones, colour patches and noises, but a system of propositions."

The professional audiovisual specialist is first and foremost an expert in the communication of knowledge. His ultimate concern is not with "sticks, stones, colour patches and noises" but with the communication of systems of propositions about the world by means and in forms best suited to the nature of the proposition and of the occasion. He knows that you can sketch a bear's teeth but not his growl, hear his growl but not his hunger, state his condition but not his "bearness." He also knows that his central position in the developing systems of educational mass communications thrusts responsibilities upon him which transcend those of technological competence. He has to see himself as a public communication specialist assuming some responsibilities of the scientist, the artist, and the administrator. In the first role he is concerned with the truth, validity, and adequacy of his propositions; in the second with their believability and concreteness; and in the third with the structure of freedom in which such systems of propositions can be produced for wide availability and use.

Increased technological challenge demands increased awareness of consequences. That is why professional education in audiovisual needs the infusion of social science and theory. Exclusive preoccupation with technique in communication training would be the rearguard tactic of a profession (and a civilization) perhaps in technological bloom but in historic retreat.

References

1. Bettinghous, E. P. "Communication Models" in *Research, Principles, and Practices in Visual Education*, edited by John Ball and Francis Byrnes. East Lansing: National Project in Agricultural Communications, 1960.
2. Brooker, Floyde E. "Communication in the Modern World." *Audiovisual Materials of Instruction*. Forty-Eighth Yearbook, Part I, National Society for the Study of Education. Chicago: University of Chicago Press, 1949. p. 4-27.
3. DeKieffer, Robert E. "AV Activities of Colleges and Universities in Teacher Education." *AV Communication Review* 7: 122-37; Spring 1959.
4. Festinger, Leon. *A Theory of Cognitive Dissonance*. Evanston, Ill.: Row, Peterson and Co., 1957. 291 p.
5. Finn, James D. "Professionalizing the Audiovisual Field." *AV Communication Review* 1: 6-17; Winter 1953.
6. Finn, James D. "A Look at the Future of AV Communication." *AV Communication Review* 3: 244-56; Fall 1955.
7. Finn, James D. "Automation and Education: I. General Aspects." *AV Communication Review* 5: 343-60; Winter 1957.
8. Finn, James D. "Automation and Education: II. Automatizing the Classroom—Background of the Effort." *AV Communication Review* 5: 451-67; Spring 1957.
9. Gerbner, George. "On Content Analysis and Critical Research in Mass Communication." *AV Communication Review* 6: 85-108; Spring 1958.

10. Hogben, Launcelot. *From Cave Painting to Comic Strip.* London: Max Parish and Co., 1949. 287 p.

11. Hyer, Anna L. "Setting the Proper Keystone." (Editorial) *Audiovisual Instruction* 4: 284; November 1959.

12. Innis, Harold A. *The Bias of Communication.* Toronto: University of Toronto Press, 1951. 226 p.

13. Lasswell, Harold D. "Communications as an Emerging Discipline." *AV Communication Review* 6: 245-54; Fall 1958.

14. Osgood, Charles E.; Suci, G.; and Tannenbaum, P. H. *The Measurement of Meaning.* Urbana: University of Illinois Press, 1957. 342 p.

15. Pool, I. de S., editor. *Trends in Content Analysis.* Urbana: University of Illinois Press, 1959.

16. Saettler, L. Paul. *The Origin and Development of Audiovisual Communication in Education in the United States.* Doctor's thesis. Los Angeles: University of Southern California, 1953. (See three articles based on this dissertation in *Audiovisual Communication Review,* Spring 1954; Spring 1955; and Fall 1955.)

17. Smythe, Dallas W. "An Approach to the Political Economy of Communications." Urbana: Institute of Communications Research, University of Illinois (dittoed).

SECTION IV

The Role of the Colleges of Education and Communication

PROVOCATIVE QUOTATIONS FROM THE SEMINAR DISCUSSIONS

Walter Beggs

"Education is now internationally competitive. I've been at this game for over a generation and this is the first time, to my knowledge, that we have faced it overtly. The two great power constellations, Russia and the United States, are pitting not alone their military might but their total cultural enterprise, one against the other, in the greatest contest this world has ever known—a competition for cultural survival. We can no longer indulge in leisurely tinkering with the learning process. We must prepare to do what we have always said we wanted to do—develop the manpower potential of this nation to its fullest extent."

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"I don't think we realize how much we are encompassed by the concept of the formal classroom. Our whole educational endeavor is built around it. We assume blandly that this is the best way to teach kids. Maybe it is. I am not saying that it isn't, but I think we have to find out. Now we have tools with which we can reach kids at the "nth" part of their life, day or night."

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"Probably 50 percent of our teaching faculty in the United States, and maybe more, is spending its time in simply parroting facts to youngsters in the classroom. Certainly there is a better and a more Christian way to do it than taking valuable teacher time for that purpose."

Melvin Brodshaug

"Our people in public relations are interested in 'effect,' but their prime interest lies in the characteristics of the audience, the personality, predispositions, responsiveness, readiness, background, etc. They're much more concerned with the audience because in public relations (different from advertisers) they never have really quite the same kind of response. In the whole area of persuasion I feel that serious studies of the audience are of extreme importance. So with some communicators, therefore, I would say that the audience is primary."

Burton Paulu

"Most people get their impressions about the world and their information and misinformation from the general entertainment, news and information programs of the commercial output, in films, in radio and television. I don't think you can really train the audiovisual specialist unless you have reference to this whole broad field."

William Fulton

"Actually, we are highly inconsistent when we talk about a generalist and a specialist combined. I think it is impossible. If he is working on one level, he will delegate jobs to people who are highly specialized in segments of this whole operation. We've been talking about the general elements required on this whole administrative job. Now, that doesn't mean that I'm going to be a specialist in every one of them, but I may need to know a good deal about all of them if I'm going to generaliy supervise a program."

Paul Witt

"In the preparation of the audiovisual specialist there must be definite provisions for curriculum and teaching. On the other side of this coin, however, remember that the curriculum and teaching specialist need some preparation in the audiovisual or instructional materials or communications field—call it what you like. In addition, this program that we're trying to get at is really, if it's any good at all, going to be a revolving, dynamic sort of thing, and we're never going to get it made completely. But if we improve our process of making it, we'll be making very important progress."

A CROSS-DISCIPLINARY APPROACH TO COMMUNICATIONS STUDY

Gordon A. Sabine

THE WORD "COMMUNICATIONS" has gained currency in our everyday speaking to the point where quite often we feel that by invoking this magic word we will dispel the vexing problems which confront us. But invoking the word is more like opening Pandora's box. The multitude of unsolved problems which is revealed sometimes makes us wonder whether we should not have let well enough alone.

The existence of seemingly insoluble problems, however, is an excellent enticement for some to plunge headlong into a lifetime of work devoted to their solution. We at Michigan State University in the College of Communication Arts are such persons. The feeling that we should have let well enough alone is rare, fleeting, and quickly supplanted by a renewed desire to understand human communication.

We are not alone in wondering about the communication process. Many disciplines have been and are concerned with studying aspects of human behavior which have bearing on communication. We are interested in the theories of these disciplines but our primary focus of attention is the communicative act, the communication process itself.

This, then, is the bond which holds us together in the College of Communication Arts—an intense and deep-abiding interest in the basic process of human communication.

Interest alone, however, is not sufficient to maintain a viable scholarly effort under one administrative roof. There must be some end or ends toward which we strive as a group. I would like to discuss briefly what we feel are worthy ends at our present stage of development, because during the course of this discussion, it will become apparent what contributions a program such as ours can make to persons in audiovisual in-

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Presented to the seminar and discussed by Paul Deutschmann, director of the Communications Research Center, Michigan State University. Original title of this paper was "What Does the College of Communication Have To Offer in the Training of the General Audiovisual Specialist?" The author, formerly dean of the College of Communication Arts, is now vice president for special projects, also at Michigan State. Special appreciation is due Dr. Hideya Kumata, associate professor in the Departments of General Communication Arts and Sociology for his comments and criticism of this paper.

struction and what help audiovisual can give to us.

At present we are working with what might be called "sub-theories." Particular aspects of the communication process and particular communication situations have received relatively more emphasis than others. Further, there has developed a distressing tendency to compartmentalize our work. Let me give you one small example. There is a growing literature on the communication aspects of education by television. As you well know, the greatest bulk of work in learning from a projected image has been films. Although they seem highly related and relevant, the two areas of study appear to have gone their separate paths.

I do not mean to deprecate the work of any area. Far from it. As we look at the literature concerned with communication we find that there is an emergent theory of diffusion of information, one in the relationship of language structure and symbolic processes, another dealing with factors affecting communication in small groups, and another in the consequence of mass media messages—quite an array of contributions.

One of our primary goals is the eventual production of *more inclusive* theories. We hold this goal as highly valuable although at the present time this theory is more hope than actuality.

Thus we do not promise our students any neatly wrapped and precisely arranged package. We hold out the opportunity to explore, to try out, to poke around in the interstitial areas across disciplines. These are rather flowery words, to be sure, but the freedom to move in directions not possible under more conventional and traditional academic departments is a reality. This is one of the advantages of being a college. We are not an appendage to any other unit and we have relative freedom to make a great many decisions. Let me warn you that at times our decisions may be clumsy and inept but more often than not they make for an exciting and challenging program of study. And we learn from our mistakes.

How are we attempting to prepare scholars? Our training is pointed in the following directions:

1. *Integration and synthesis of various theories of human behavior in application to crucial communication problems.* We accomplish this in two ways. Our own faculty is interdisciplinary in nature. Some come from mass media backgrounds, others from backgrounds in the social sciences (mainly sociology and psychology), some from speech. The interaction of these persons with each other and with students often gives rise to lively and invigorating discussions about communication. Secondly, we maintain an active and friendly relationship with other units in the University. Let me point out that this is more than lip service. For example, we have loaned one of our staff members to teach part time in sociology. Psychology has asked for another to teach a course in that department. We have an interdisciplinary advisory committee upon which we call for advice and consultation. Members of other departments sit as chairman of Ph.D. committees for our students. Our communication training program (of which I will say more later) calls for the services of an interdisciplinary team from the University.

In our short existence, students from our graduate program have made outstanding records in other departments and have earned their respect. All of

this leads to a healthy atmosphere for interdisciplinary work.

2. *Provision for experience in the application of communication principles to various kinds of activities.* One of the strong points in our program, I feel, is the active participation of our College in activities intended to spread what we know about communication to people who seek it. Let me briefly dwell on one such activity. For the past year and a half, we have been running communication seminars for foreign participants in the ICA* exchange program. At these seminars, we try to get across the communication point of view in order to give participants something to fall back on when they are called upon to impart the knowledge they have gained while in the United States. The development of this program exemplifies the kind of interdisciplinary cooperation I spoke of earlier. Our development committee has pulled representatives from audio-visual services, sociology, anthropology, psychology, agriculture, speech, and other areas. To this date, our teaching staff at these seminars have been interdisciplinary without exception. Our graduate students get invaluable experience from these seminars. Here they see in action some of the things talked about in the classes. They can assess for themselves the effect of conducting particular communication practices.

We are also strongly committed to work in international communication. Fortunately, we have an office of international programs on our campus through which we can operate. Last summer two of our staff went to Jamaica for work in agricultural communications. One of our staff has been invited to Costa Rica for consultation on communication problems. Talks have taken place on the feasibility of having communication training in Thailand for the southeast Asian countries. If one thinks of the communication problems which exist in our newly emerging independent countries, he can see unlimited opportunities for study and work. The audio-visual instruction aspect is, as you know, one of the keys to this development.

3. *Creation of strong research support.* It goes without saying that we encourage basic research. This encouragement, in our case, takes the form of the Communications Research Center, a unit within our College with a separate budget. Although we have had a modest amount of outside funds for research, our thinking is that the Research Center can function even in the absence of contract research. The student is encouraged to take part in Center activities. The Center itself draws interdisciplinary support from the University. In the past year it worked in cooperation with the departments of political science, advertising, speech, sociology, and the College of Engineering. In the very near future Center personnel will cooperate with the College of Education to conduct an experimental type of seminar under the sponsorship of Title VII.

4. *Development of an atmosphere to nurture rigorous and critical evaluation of communication theory and research.* Communication theory, we feel, must be scientific in nature. By "scientific" we mean the assumption of certain basic postulates concerning the nature of reality and knowledge. We want to produce a logically consistent set of interrelated statements which adequately fit data from the physical world. This

* International Cooperation Administration.

means that we encourage the understanding of the philosophy of science. We want students who will be able to analyze statements about communication and draw out the implications of such statements.

Does this mean that our program is research-oriented? The answer is a definite yes, if by research is meant the production of useful generalizations for explanatory and predictive purposes. The answer is no, if by research is meant only a quantitative, statistical, experimental specialization. We are all researchers in the first sense.

These are four fine directions in which we move. Theory is an admirable endproduct. Does our behavior fit the fine words which have just been spoken? I can blithely say yes and pass on to the next topic. But let me give you a typical program for our graduate student and you can draw your own conclusions about the matching of words to actions.

Core Courses

During his first year, the graduate student will take three communication core courses. Two of these will be the introductory graduate seminar to communication theory and the introductory course in research methods and methodology. The third will be selected from one of three courses—language and communication, cross-cultural communication, or small group communication theory. The student will select one or more areas outside of the College for study in depth. These areas may be in psychology, social psychology, sociology, education, linguistics, or a combination of these. He will work with a senior faculty member in some communication research project.

During his second year, he will take three more communication core courses. These may be selected from the mass media theory seminar, intermediate research methods, language and communication, cross-cultural communication, or small group theory. Certain outside courses will be selected to augment one of the core courses. For example, the research methods course may be augmented by courses in the philosophy of science and statistics. The language and communication course may be supplemented by work in linguistics. The student will continue his study in depth of one or more areas outside of the College. He must show competency on a par with students who are majoring in those areas. In addition to working with a senior faculty member, the student will get teaching experience as an assistant in one of the undergraduate communication courses.

During his third year, he will take four communication core courses. One of these will be our advanced communication theory seminar. The other three may be selected from communication seminars he has not yet taken. In addition, he will be offered courses in the psychology of language and ethnolinguistics. The student's study in depth of one or more areas should prepare him to pass doctoral examinations prepared by outside cooperating departments.

In addition to teaching experience with undergraduate communication courses, the student will get teaching experience with adult education through one of the College's adult training programs.

Along with the program outlined in the preceding paragraphs the student is responsible for preparing himself to pass doctoral comprehensive examinations, to pass the foreign language re-

quirement (or substitute substantive cognate), and to prepare a doctoral dissertation which will satisfy his interdisciplinary doctoral committee.

These are the bare bones of a typical program. You can see that we give a common orientation through our introductory theory seminar. Then we send the student out to gather the knowledge he needs. We bring him back again in the advanced theory seminar where collation and synthesis attempts are reviewed.

Several things can be said about the above program. It is obvious that it is not technique-oriented. We presume technical competency in whatever area the student comes from; if he doesn't have it, we require him to get it outside of his degree program. We presume that the student is vitally interested in developing sounder bases for making strategic decisions in personal and professional communications.

The insistence on theory does not necessarily mean that our program is solely interested in producing scholars who will train others in the content of communication offerings. The program is vitally interested in advanced training of persons who will themselves be users of communication training. Some of these are professional communicators, those whose life work is producing messages for public consumption. To these persons, the program not only offers the opportunity for deeper understanding of their particular professions and place in human affairs, but also the chance to widen their scope of interest through the concentrated study of the communication process.

We expect the student to have some understanding of each of the many substantive areas so that he will be able to synthesize these in terms of communication problems. But we are also interested in having him develop special competency in one or more of the basic substantive areas. The label "jack of all trades" and its pejorative conclusion "master of none" is something we seek to avoid.

What kind of students do we have? Although our Ph.D. program in communication has been in existence less than two years, we now have 23 degree candidates in residence. Among these are three Ford Foundation Fellows, one ICA Leadership Award grantee, and two Fulbright grantees. They come from professional work in agricultural information services, radio and television broadcasting, journalism, English teaching, institutional management, educational administration, and from various academic disciplines. The basic dimension held in common by these persons with such diverse backgrounds is the desire to study the communication process in depth.

Are we actively seeking new students? The answer must be a mixed one. We have started no active recruiting campaign. Somehow, by word of mouth, our program has become known. But we will always welcome students who intend to devote themselves to the study of the communication process and who have high prospects of contributing to knowledge in significant ways.

Let me turn now to the specific question of what the College of Communication Arts has to offer a person in audiovisual instruction. It is my feeling that you in audiovisual activities and we in an academic communication program have a great deal in common. I spoke of a bond which held our College together

—the interest in the communication process. You have the same bond. You and your students would feel at home in our College.

We offer the mature professional worker in the audiovisual area a welcome flexibility and freedom in graduate study. There is a chance to exchange ideas on communication theory in one of the few required courses we have. Beyond this, our faculty is committed to the idea of "hand-tailoring" a program for each student. If he is interested in advanced learning theory, he may seize this opportunity to specialize in experimental psychology, but he will get the opportunity to fit his knowledge into a communication framework. If he is interested in problems of message structure, he will get the opportunity to study the nature of language and the role of nonverbal messages, but he will also have the opportunity to synthesize these areas in a communication framework. In other words, the audiovisual specialist, or any other student for that matter, will be given every opportunity to study in depth any area concerned with communication. But he will get the additional opportunity to analyze what he has learned in terms of the communication process.

We feel that the approach we are taking will lead to the development of more inclusive theories. We intend to move from fine description, categorization, and construct development through analytic and explanatory theory, through testing to rigorous prediction, and beyond. You can help us and we think we can help you.

Because he will have more theoretical foundation in communications, an audiovisual specialist who completes our program will be able to make more applications and carry the use of his specialized audiovisual knowledge across more boundaries than the specialist who does not have this foundation.

Just as man is getting closer and closer to outer space these days, so do those of us in education need to bring ourselves closer and closer to the outer reaches of knowledge, which today—whether we have yet realized it or not—actually are camping on our doorsteps.

TRENDS IN TEACHER EDUCATION: THEIR IMPLICATIONS FOR AV

Walter K. Beggs

WHAT DOES THE COLLEGE of education have to offer in the training of the general audiovisual specialist? Before this question can be answered adequately, two assumptions must be stated which reflect a reasonable consensus of the leadership in both the audiovisual and teacher education areas. The first concerns the nature of the audiovisual specialist himself: What kind of a functionary is he, what should be his background of knowledge, what competencies does he need, and where does he fit into the pattern of a given educational enterprise.

The second consideration deals with the trends that are apparent in teacher education. We shall have to assume certain of these in order to examine their implications for the audiovisual specialist.

In order to establish a respectable composite of background and competencies required for the functionary under consideration, I have accepted the specialist's own definition of himself as he has expressed it in various ways. While certainly not an exhaustive nor a documented inquiry it will perhaps suffice for our purposes here.

As to background, a majority seem to agree that a general liberal training is essential. If any specific discipline is indicated it is not apparent at the moment. However, a working knowledge of the underlying purpose of all of the subject disciplines is a minimal requirement along with a clear understanding of the over-all structure and dimensions of the area. This is significant because it takes the specialist immediately out of the mechanic, technician category and implies a marked intellectual capacity, which in turn should have some implications as to the selection of candidates for specialization in the field.

A thorough knowledge of the learning process is also necessary especially as it pertains to human growth and development. And while not so universally expressed, an understanding of the impact of the teacher on the growing and

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Original title of this paper: "What Does the College of Education Have To Offer in the Training of the General Audiovisual Specialist?" See list of participants on page 4 for author's affiliation.

learning process seems equally important.

Beyond the general background certain highly specialized skills are required, to wit:

1. The ability to break raw subject matter down into teachable concepts. Actually this is a combination of talents including sufficient knowledge of the subject area to work in it with confidence and to know where the concept fits into the natural learning sequence of the subject. In most cases this will be a cooperative venture with the teacher and specialist working together.

2. The facility to work cooperatively with curriculum planning groups of varying size in the process of relating teaching materials and aids to the several units of work being designed. Here knowledge of both curriculum construction and teaching media are paramount.

3. The ability to organize an audiovisual center so that equipment and materials can be coordinated into the teaching program with dispatch. The process obviously becomes more complicated as the size of the school enterprise increases. Presumably, a part of the skill involved here is concerned with policy formulation.

4. Administrative ability of a rather high order is indicated. Not only is a working knowledge of the general processes of administration important, but skill is necessary in assessing the peculiar operation of a given administrative structure. The audiovisual specialist must know the staff from top to bottom. He must know how to avoid the tensions and personnel differences found in even the best managed structures, and he must win the respect of the whole organization.

5. Skill in the care and operation of equipment is a basic requirement. This does not mean necessarily that the specialist will be called upon to continuously perform these tasks, but he probably will have to train operators and maintenance personnel, and certainly he will have to supervise them.

6. The specialist must know and be skilled in the use of evaluation techniques. He will be asked to prove that the equipment, materials, and techniques of his craft do improve teaching and learning.

7. And finally he must be an operational research specialist. Probably above everything else, he should be devoted to experimentation. He must be a creative artist not only in the use of teaching aids and media but in the evolution of ideas for new materials and equipment and in new or different uses for the established equipment.

Now it is obvious from the above listing that the development of this specialist is no mean undertaking. It is equally obvious that teachers colleges have a great deal to offer in his preparation. Psychology of learning, curriculum planning and development, administrative competency, supervisory techniques, evaluation, management, and personnel relations are all standard offerings in any modern teacher education program. Moreover, the audiovisual divisions of these colleges and the laboratory schools they maintain are ideal for the specialist's apprenticeship and intern experience.

On one point there is universal agreement. The specialist must be a master teacher in his own right. In this connection the college of education has both a contribution to make and an obligation to meet in the selection, refinement,

and evaluation of candidates with high potential for superior teaching.

However, these contributions are nominal at best. This is not to deny their importance, but I should like to propose that the greatest asset to the field of audiovisual media specialization is yet to come in some shifts and adjustments that are underway in the colleges of education themselves.

Three Clear Trends

As noted above, we shall have to assume that certain developments will occur. This is true, because the dimensions of the changes can only be predicted at the moment. For that reason, I should like to trace briefly three trends that appear to be fairly well established and conclude with an elaboration of one which, in my estimation, will establish the audiovisual specialist as an integral part of the teacher education structure.

In the first place, four specific content areas are being refined into disciplines in their own right. Three of these are controversial because they are branches or rather they have grown out of established disciplines. The history and philosophy of education, or as it is sometimes called, the foundations area which includes comparative education is not only considered basic in the education of a prospective teacher, but is actually an important part of liberal education. This is also true of educational psychology which is in reality a major division of human growth and development. A third area which we shall call community structure and educational policy is related to sociology and cultural anthropology and, in some respects, to political science. What is happening here is obviously the same sort of hybridization that is taking place all across the traditional disciplines. Biochemistry is a good example; agricultural economics is another. To enter into the debate as to whether this is a good trend would be pointless here. Our only purpose is to indicate a development that seems well established.

There is another field called adult or continuing education which may eventually achieve the status of a school or college. Just now it is an extension activity in the main which calls upon the resources of the total institution for service. However, most of the serious thinking about its potential is being done in teacher education institutions.

A second trend concerns the college as a liaison agent between the practicing profession, the public, and other branches of higher education. Any cultural enterprise as large and as involved as the public school system must have a segment of collegiate enterprise which is the seat of its peculiar and professional needs. And this cannot be a secondary or tertiary purpose. I personally feel that schools of education have been somewhat derelict in this connection. However, there is considerable evidence now that they are beginning to take a new look at their responsibility to the field as well as to the other divisions of the educational community. Time permits no prolonged discussion of this function except to point out the desirability, if not the necessity, of a professional college faculty which provides strong leadership in planning and executing programs for teachers, administrators, supervisors, and other personnel.

But it is the third trend that is of most significance to us in this symposium. No one can do justice to it in a few brief paragraphs, but perhaps

we can produce a crude sketch which will suffice here. It grows out of three or four tremendous forces that are now shaping the course of world civilization. One is the burgeoning population of the earth and the rapidly increasing mobility of people. A second is the equally startling plethora of material things and personal services which we call the gross product of our automotive age. Only a minority of the people have such abundance, but the rest are demanding it.

The third force is the almost miraculous advance in scientific endeavor and the concomitant piling up of new knowledge at a rate that is unbelievable, and certainly much faster than we can translate it into social policy. With man just on the threshold of space exploration, yesterday's fantasy becomes today's stark reality and tomorrow's history. This fast are we moving.

A fourth force, and this may not be a force at all but perhaps the result of the others we have mentioned, is the rapidly accelerating interrelatedness of the peoples of the earth. No one will even venture a guess as to the final implications of this phenomenon, but certainly it must mean that we will have to discard whole segments of our preconceptions of world social, political, and economic organizations.

Of more immediate concern, however, is the impact of these forces on our own educational endeavors. One is already being felt and causing much concern. Education is now internationally competitive. The two great power constellations, Russia and the United States, are pitting not alone their military might but their total cultural enterprise one against the other in the greatest contest this world has ever known—a competition for cultural survival.

We can no longer indulge in leisurely tinkering with the learning process. We must prepare to do what we have always said we wanted to do—develop the manpower potential of this nation to its fullest extent. I am not going to enter into any controversy as to what part of this responsibility is the school's, what part belongs to on-the-job training, and what part should be left to the home or the church. But I am going to insist that it is a teaching job in the main, that the practicum of this task must be researched completely, and that this is a major function of the schools of education.

I am not sure by what combination of forces the practicum of teaching has become, of late, dissociated with the process of learning, but I do know they belong together and that design and method are as important in teaching as they are in research—where they are almost all important. Add to this the remarkable developments in electronics which have placed new tools within our reach as well as some new ideas as to the use of the more established teaching devices, and the direction in which we need to move is indicated.

Suppose we assume that verbal symbolism is not the only nor even the best medium for the transmission of knowledge to all kinds of people. Then must we not proceed to try out every known kind of media? Must we not harness films, audio and video tape, live television, teaching and learning machines actively to the teaching act? And check them out as to their possibilities in developing greater efficiency in teaching and learning? Perhaps we must even have the courage to examine subliminal perception objectively yet boldly to see if it has anything to offer.

Suppose we were to assume experimentally that the formal classroom is not the only, if indeed the best, unit organization for the instruction of all students. Then perhaps the direct learner could be left pretty much to himself with only such supervision as he might need to maintain pace? For others, almost constant supervision might be indicated, but we need to search for every place and situation and phenomena where we might relate a learner to knowledge and experience.

Greater Competencies Needed

Teachers, adequate for this responsibility, must have deeper backgrounds and greater competencies than we have previously thought. Certainly the minimum would be complete security in his subject background as a base, but beyond this he should have equal mastery in the design and practicum of his undertaking.

I presume that you may wish to consider some of the specifics implied by this statement in the discussion sessions. Hence, I am going to conclude with a brief attempt to place the audiovisual specialist into this complex as both a recipient in his training process and a contributor in his own right.

In his education the college serves as his laboratory. The entire thrust of that portion of the teacher education program concerning practicum is to assist the neophyte to communicate more adequately. The audiovisual specialist is immersed in an environment rich in educational philosophy, sociology, and psychology; in methods and approaches; and in materials, devices, and experiences. It is his job to serve as a catalyst in relating these appropriate facets to each other so that learning for youth becomes a high adventure and so that its results might be maximum and permanent. In addition, the teachers college program should be so permeated with experimentation and investigation that the program of education is always dynamic and flexible. Here too, the audiovisual specialist has a unique role to fulfill because of his relationship with all aspects of the educational process.

As a functionary he can become, depending on his choice, a specialist in media research, a member of the faculty, a director of the audiovisual division, or he can move to the field and serve in any of the capacities just mentioned.

You, who represent this specialization, are much better prepared than I to spell out the details implied here. But I would leave you with this concluding observation: In whatever specific place or combination of places your specialization is spotted, it must be for the foreseeable future on the frontier of educational endeavor.

SECTION V

Influence of New Technological Developments

PROVOCATIVE QUOTATIONS FROM THE SEMINAR DISCUSSIONS

Marshall McLuhan

"Traditionally, artists have instinctively in past centuries almost accepted the role of providing new models of response to the new challenge of technology. It is simply an indispensable sort of radar or navigational aid to mankind. If the artist is radar, if he is the antenna of the race, he does make models well in advance of the impact of technology by a kind of intuitive awareness of over-all situations. He provides us with signs to accustom ourselves to coming new patterns or provides control conditions for new awareness before the blow falls. However, in our time, I rather suspect that the artist has merged with the new technology. The speed of the new technology has not given the artist those decades of advanced avant garde planning that has been his role in the past. I rather suspect the artist has gone inside the new media."

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"The reader of the printed book, reading silently, is a projector in a sense—a movie projector. That's why it is so difficult to learn to read. Reading becomes almost impossible in the television age. You can't ask people today to be projectors when they are accustomed to being several other things, like screens and camera eyes."

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"A person today from a backward country can learn to read more quickly than a person from our culture. For instance, a person in North

America has far more trouble in learning to read today than someone from a culture where they never had reading."

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"Any backward country has an enormous advantage over us because they are not 'bugged' by the problem of applied knowledge. They are free to use the new forms for new ends and not old ends. This approach to art has been in North America since 1770. We took the latest European technology which was the printing press and tried to use new ends. Schools in Europe had a backlog of feudalism and oral culture which took centuries to liquidate, while we raced ahead with the new technology. This is the happy state of the backward countries at the present time. They are free to rush ahead with new technology. They are not embarrassed by a backlog of old technology or old educational technology."

ELECTRONICS AND THE CHANGING ROLE OF PRINT

Marshall McLuhan

"THE ARTIST," wrote Wyndham Lewis, "is engaged in writing a detailed history of the future because he is aware of the unused possibilities of the present." It is quite literally true that since printing it has been the poets and painters who have explored and predicted the various possibilities of print, press, telegraph, photograph, movie, radio, and television. In recent decades the arrival of several new media has led to prodigious experimentation in the arts. But, at present, the artists have yielded to the media themselves. Experimentation has passed from the control of the private artist to the groups in charge of the new technologies.

Whereas in the past the individual artist, manipulating private and inexpensive materials, was able to shape models of new experience years ahead of the public, today the artist works with expensive public technology, and artist and public merge in a single experience. The new media need the best artist talent and can pay for it. But the artist can no longer provide years of advance awareness of developments in the patterns of human experience which will inevitably emerge from new technological development.

The painters of the fifteenth century explained perspective or *fixed* point of view to the public when print was scarcely known. Aretino became "the scourge of princes" when print was young and long before the newspaper took up its inevitable republican role. Petrarch developed the sonnet as a mode of self-expression and of self-analysis before print and long before Montaigne revealed the artistic meaning of the printed page in his *Essays*.

In a word, the artist discerns the forms of technological change in their full cultural dimensions before the technicians actually take over.

But today, for the first time in human history, our technology includes an external projection of each of our senses. Nobody has considered the significance of this development which confers on our technology an inclusive organic relation to mankind for the first time. From the invention of the wheel and

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Original title of this paper: "New Media and the New Education." See list of participants on page 4 for author's affiliation.

alphabet onwards, we have been accustomed to conceive technology as a progressive splintering and dissociation of what in nature is integral and organic. Thus the wheel was an abstraction from animal form, since a running animal is in a sense rotating. And the first movie ever made was of a running horse.

Today radio, telegraph, and TV have no moving parts. The electronic age abandons mechanism for the movement of light and information only. Viewed in the crudest quantitative terms, the shift from mechanism to electronics presents the character of total revolution. It is inconceivable that school and society alike should not receive the full impact of this change.

Looked at more closely, the electronic mode of shaping situations reveals its bias toward *field* structure. But even "field," preferred by physicists, can mislead by suggesting a flat, single plane. A multi-dimensional field is intended, an "everyway roundabout with intrusions from above and below." Thus for example, "point-of-view," so inevitable in print culture, is alien to electronic "field" and the affiliates of such "field." For point-of-view originates in the discovery of a fixed position as creating perspective, or vanishing point. It was this discovery in the fifteenth century that we associate with the end of medieval art. It was the same discovery taken up by map-makers and by navigators that made the world voyages possible. For prior to this discovery of space as homogeneous and lineally continuous, it was not known that one could simply proceed on and on in a straight line on a single plane. Mircea Eliade's *The Sacred and the Profane* (Harcourt, Brace 1959) is a study of the contrasted ideas of space and time as between modern and pre-modern man. And Harold Gatty's *Nature Is Your Guide* (Collins 1958) provides much illustration of pre-mechanical relation to time and space. The methods and procedures in organizing our lives in time and space which are still accepted as "natural" derive almost entirely from the introduction of mechanism into teaching and learning by means of the first teaching machine which is the printed page.

Patterns of Print Culture

In providing the first complete mechanization of an ancient handicraft, print created an explosion in learning in the sixteenth century. But the technology by which the mechanization of writing was achieved also invaded every phase of teaching and learning during the past 500 years. It will repay us to consider, briefly, what happened, if only because we are today involved in a much greater technological change which concerns the nature of teaching and learning more pervasively than print ever did or could.

Basically, the mechanization of writing involved the inspired step of segmentation. Movable types are a kind of static analysis of the movements of the scribal hand. And whether we regard the differential calculus or assembly-lines, science and industry have since the sixteenth century, and until recently, extended the principle of segmentation to all procedures of investigation and of applied knowledge.

It is all the easier to observe the patterns of mechanical or print culture now that we have for more than a century (since the telegraph) lived with the new electronic patterns of knowledge and of human association. It may seem baffling that in the electronic age there should be such an increase of books and print-

ing. But the same paradox occurred after printing had ended the constitutive role of manuscript and scribe. For everybody began to write a great deal after printing. And now that print has ceased to constitute the major basis for teaching and learning and is no longer the dominant technological form of our world, there is much more printing than ever before. So far as my studies have taken me, the reason for this is that a new medium splinters the older ones into a variety of new forms and roles. The typewriter merges composition, writing, and print publication in a single act. Today the book has many new roles and functions, as had the manuscript in the sixteenth and seventeenth centuries.

Here, then, is a brief indication of the new patterns that entered teaching and learning as a result of printing. There was first, uniformity and repeatability which conferred the power of speed and silence on the reader. The manuscript was read slowly and aloud. The speed, uniformity, and repeatability of the printed book entirely altered patterns of study. It was then possible for the first time to read *widely*. And repeatability and accessibility of the book made it unnecessary to memorize all that one read as the manuscript reader had tended to do for purely practical reasons.

For the inaccessibility and non-repeatability of the manuscript made memorizing a need as it made oral learning and disputation a natural thing, capable of much greater speed and range than manuscript reading could achieve. (Today we encounter the reverse situation in which film, videotape, and even photography permit the rapid grasp of complex cultural gestalts, past and present, which the printed word cannot convey even slowly.)

The portability of the book, shared with its repeatability and low cost, created on the one hand the habit of privacy and silence, and on the other, made possible the classroom in which all have ready for use the same data and texts. By contrast, the pre-print classroom expended much time in enabling each student to make his own text while the teacher did aloud the work of the ancient exegete and the modern editor. All kinds of rhetorical analysis, word by word, went hand in hand with minute considerations of variant readings and punctuation. (See Baldwin's *Small Latin and Lesse Greek*.) Thus there arose from print a new kind of corporate life in the school and a new kind of privacy in the study. The curriculum was revolutionized to include a great range of authors and several languages, such as never could have been encompassed by manuscript means.

But print at once gathered another group of changes, namely, the related habits of self-expression and self-investigation. Print as a mass medium offered a sort of launching pad for the projection of the private person into the role of public institution. Pietro Aretino and Rabelais were perhaps the first to explore these new dimensions for the individual ego. Ego enlargement via print at the same time created a sense of fame and self-perpetuation through, as it were, the repeatability and indestructibility of the private self. Marlowe's *Tamburlaine* and his *Doctor Faustus* are excellent types of the new megalomania arising from print.

Publication for Chaucer, by contrast, meant only a private reading of his work

to friends. Self-expression, self-portraiture, and self-analysis swiftly merged in the sixteenth century in the great figure of Montaigne. He revealed another feature inherent in the segmental analytic patterns of print, namely "systematic doubt." After Montaigne, print laid few further patterns on the private self and began, as the newspaper developed, to release its powers in the reshaping of society and politics.

There is scarcely a feature of print culture which can today be discerned in the over-all field of our new electronic technology. Static fragmentation as a means of analysis and of production and expression are not to be found. Jacques Barzun, in his *House of Intellect* which he assures us is built on the alphabet (and print), has provided a handy testimony to the total incompatibility of the new age with the typical values and procedures of the print age. Art, science, and philanthropy today, he says, represent a team destructive of all intellectual values. (He is careful to dissociate intellect from intelligence.) Perhaps he might have written a different book had he understood the private and social consequences of print as print. For one of the curiosities of print and literature is an obsession with "content" as opposed to "form." It is easy to see why the blank page awaiting an imprint should appear to "contain" things of good or ill use and report. It is in fact this formal, structural aspect of the page that obliterates awareness of the page itself as a structure. To a lesser degree, this oblivion of the structure of the page, and of print itself, extends to writing in the ancient world as well. For the alphabetic translation of the audible into the visible had huge consequences such as mark off Greece and Rome from all other societies which lacked phonetic means of codifying and translating experience into analytic, visible terms.

Let us suppose for a moment that a team of present-day testers had been available in the year 1500 to find out whether the new book or reading machines and instructional materials were capable of doing the plenary traditional job of education in the future. Would not this team, even as it would today, ask whether the privately read word could measure up as a means of teaching and learning to the memorized manuscript and its formidable extension in oral exegesis and group disputation? Since we know that printing wiped out the educational procedures of the preceding centuries, we can say that the testers would have been quite wrong in asking whether the new could compete with the old when the new had only one mode of procedure, namely, to erase and to brainwash the older culture. Our testers today are still geared to the static assumptions of the print form and ignore the structural dynamics of the electronic form. In 1500, as in 1960, they could report variations in the facility with which educational skills in a wide range of subjects are achieved by print or by ETV. But they have no regard for the new patterns of perception and sensibility which are subliminally imposed on us all by new structures for codifying and moving information. For the new structures modify our means of apprehending past and present. They re-create our sense of space and time, of teaching and learning. Basically, I should say that in the electronic situation there is great new stress on learning (creativity) and a corresponding relaxation of teaching stress.

Again let the artists of the last ten decades be our guide. The Romantics reacted strongly against the book as book, spotting it as the enemy of nature and of natural modes of learning. They insisted upon the creative imagination as the birthright of all and began a ceaseless quest for the inclusive and integral Image. The arduous search was taken up with great intensity by the Symbolists who realized that it could not be a merely visual image but must include all the senses in a kind of dance. En route to this discovery, Hopkins and Browning, Poe and Baudelaire ended the print-fostered dichotomy between author and reader, producer and consumer and swept mostly unwilling audiences up into participation in the creative act. After Poe, and since Cézanne, poets and painters devised ever new modes of speaking not *to* their readers and viewers, but *through* them. As the voice of art resonated within and through the print-cultured audiences, the cry went up and still continues: "the artist is using a private language." The artists' demand that the audiences enter the artist role as co-creators was not welcome to the consumer mind. Such is the meaning of the abstract art and the do-it-yourself kits which artists have for a hundred years been carefully preparing for their affronted public.

Children, of course, love abstract and symbolist art and experimental films. But by the time they have been given in late adolescence the cookie cutter patterns of the House of Intellect, they freeze up in the presence of the playfully abstract cartoons of Picasso and James Joyce.

That situation is easy to understand. The educational establishment is also built on print and a-b-c-d-e-mindedness. But today we are asking what will be the shape of things to come educationally. The answer is simple. The artists have told us in minute detail this past 100 years. They have built endless models of our challenge and our needs and of how to live with the new instructional materials. They have told us that there will be no more consumer packages in education—not at least if education is to have a relevance to our new world. The dialogue will replace the guided tours of data provided by the book as teaching machine. In the dialogue there is no maintaining of a point of view, but only the common participation in creating perpetually new insight and understanding in a total field of unified awareness. For dialogue is not light *on,* but light *through,* which is the difference between film and TV.

Let us note that in all forms of electric circuit and appliance—whether telegraph, radar, or guided missile—we are confronted with the give-and-take of dialogue and not the one-way song of lyric self-expression. Even the various forms of electric appliance impose a large measure of "do-it-yourself-ness"—whether the electric toaster, the vacuum cleaner or the washing machine.

I say, therefore, with impersonal assurance, that unless we choose to abandon all electric forms of technology we cannot possibly retain in our teaching and learning the modes of instruction and apprehension associated with the mechanical forms of print and its innumerable cultural progeny. Even if we are zealous, like Dean Barzun, to retain and to maintain the characteristics of print-culture, we shall need to know much more than he does about the cul-

tural dynamics of print in the individual and in society; also it would be necessary to have a very complete knowledge of the new dynamics of our new technology in order to harmonize the twain. It is characteristic of the semi-aware products of print culture that they prefer to take a strong *moral* stand on one or another horn of a dilemma. They love dichotomies. They point with pride. They view with alarm. They then feel that duty has been done by spiritual values. But of understanding and, therefore, of control of new situations they are bereft.

I am not optimistic about saving any of the traditional qualities in education from the electronic bombardment. It could be done by those who had a firm hold of both old and new situations. And since those of the older print-culture are not morally or mentally prepared to tackle the new, it behooves the products of the new electronic culture to seize and to maintain some of the needful qualities from the wreck of the House of Intellect. If this sounds like Robinson Crusoe revisiting the wreck, it will be a Robinson Crusoe equipped with electronic technology.

Image Governs Message

Earlier I listed some of the basic characters and consequences of printing in teaching and learning. It seemed a useful way of moving from the known to the less well known. I have insisted that any new structure for codifying experience and for moving information, be it alphabet or photography, has the power of imposing its structural character and assumptions upon all levels of our private and social lives, even without benefit of concepts or of conscious acceptance. That is what I've always meant by "the medium is the message." Moreover, a new medium bombards older media and awareness, stripping the older forms of experience to their bare bones or basic codes. That is why today, when we are already living through intense nuclear bombardment from within our own cultures, we have achieved almost total clairvoyance of our own condition and of our debts to earlier ages. Today, we master languages and whole cultures faster than men formerly mastered an author. Our children live in a world museum of cultures from infancy, even while we continue to educate them as if they were bolted into only one of these cultures. And these changes, or this acceleration of change to the point where change itself becomes the very matrix and foundation of society—all this is owing to our century-old shift into the electronic mode of shaping and moving information. We have left the one-thing-at-a-time of print and mechanism for the all-at-once of the inclusive "field" of electricity. And it is the very structure of this all-at-once inclusive mode in teaching and learning which automatically ends what we till now called "subjects." The electronic alters the contours of math and physics and "nature" even as it abolishes literature. The nature with which we will henceforth be *engage* is one whose lines of force we will travel and explore with the sensitivity of the greatest artists. The split between art and nature ends now, as surely as the division between culture and commerce. So far as the young are concerned, all these things are already accomplished. Their sensibilities have been formed almost entirely and exclusively by electronic modes of experience. Even the film, that last mechani-

cal link with the Gutenberg era, they experience mostly as translated through the medium of TV.

I put the matter this way in order to confront the educational point: "What is the difference between movie and TV after all?" Just to heat up the issue a bit more, let me answer that they have scarcely anything in common except the fact that both are visible. The structure that is seen, however, is another matter. The movie is a mechanical way of rolling up the world in a sequence of small still shots, not unlike the way in which print captures the movements of an author's mind in a sequence of black and white still shots. Played back, these still shots recreate or reconstruct an earlier action. The movie has built-in perspective and is superb in details to fill in the pictorial space of its perspective. In contrast, the TV image is a continuously formed mosaic with no still shots, no reconstruction of actions, no perspective, and very little detail. The TV mosaic is so poor in data, in fact, that it must be mostly filled in by the viewer. And moreover it has no light *on,* but only light *through.* So that, typically, the TV viewer is conditioned to expect much activity and to expect knowledge to be a kind of total revelation or illumination from within both subject and himself. As Dr. Ruhe of the Kansas City Medical Center pointed out, TV in medical instruction has shown (a) that the speaker, instructor, or lecturer must efface himself, and (b) that the viewer, in operations for example, was less a spectator than the scalpel. The viewer does not so much see as do the operation. Even the surgeon watching the monitor while actually performing the operation frequently is surprised by aspects of the operation which the TV camera picks up beyond his immediate visual range. Or rather the operation is translated into another medium, and so revealed in another mode, much as the newspaper translates our ordinary social and political lives into a special mode, providing quite new dimensions and meanings for them.

The Symbolist Aspect of TV

Let us say then that TV, like radio, states much less than it suggests. That is the symbolist or do-it-yourself phase of this electric medium. Book and film, in contrast, state very fully and suggest much less than electric media. That is another way of saying that electric media deal with experience *in depth,* rather than spelling it out on the single plane of flat statement. The radio listener takes for granted the action of providing a visual world for the sound experiences. The TV viewer must have an image he can complete for himself. So that even persons appearing on TV must not be too definite, or one-sided types. The vague, ambiguous, uncommitted person—whether in politics or entertainment—will survive on TV. But the definite classifiable figure who satisfies the film or newspaper medium as a right guy will frustrate the TV viewer who wants to complete his own image. The flood of Jack Paars, Mort Sahls, and Shelley Bermans has scarcely begun. But a similar non-committal, ironic whimsicality will appear more and more, not only in TV figures, but in other forms of expression not directly related to TV. The newspaper man and reader are just as baffled by these changes emanating from TV depth suggestion as the bookman. Yet a century ago, the poets and painters began to

unfold in detail this whole complicated story which has now become part of the educational drama.

The square and the egghead are the bookmen as seen by the new TV generation. In the sixteenth century, the new book generation saw the oral and oracular previous generation much as Polonius appeared to Hamlet. The razor precision of the oral schoolmen appeared to the new literary humanists as "words, words, words." They called the schoolmen not squares, but dunces.

The new criticism (or reading in depth) which has appeared in our electronic era is often called scholastic in form by the literary humanists. Is it not terribly wasteful of values and opportunities, as well as destructive of harmony, that unwittingly men should so embroil themselves in civil feuds arising from media change? In our age the onset of multiple media changes makes impossible the older patterns of gradual adjustment and oblivion of the obsolete. There is no time to adjust. We simply have to know, and understand, exactly what is happening; and indeed, as educators we can avail ourselves of the artists to help us become contemporaries of ourselves. Or, to be more exact, we must all become creative artists in order to cope with even the banalities of daily life.

Supplement to McLuhan's Paper

The major part of Dr. McLuhan's presentation to the seminar was a discussion of the diagrams on page 83. Dr. McLuhan said that basically they suggest that the structural impact (SI) of any media is usually antithetic or complementary to subjective completion (SC). He explained thus:

Any high definition (HD) structural impact (SI) tends to yield an intense subjective completion (SC) sensuously with strong overflow into the low definition (LD) area of psychic repetition of the SC pattern.

Low definition (LD) structural impact (SI) tends to give the subjective completion (SC) the role of reinforcing the structural impact (SI) with resulting overflow into the high definition (HD) area of psychic repetition of pattern.

A high definition image is one in which there is a high degree of information provided for the sense in question, be it sight or sound or touch. Such is print compared with writing. Such is radio compared with telephone. Such is film compared with television.

Now, when the information is high the participation of the viewer or receiver is low. With high auditory definition of image the radio listener is free to visualize, whereas the telephone user is not. In other words, high definition of any image encourages a fantasy use of the other senses. Low definition of any image compels a participant effort from the viewer or receiver. Many people resent the telephone because it makes such exclusive demands on their attention and such intense participation of posture and attitude. Children and teenagers love the telephone for the same reasons that highly literate and abstract persons dislike it.

Let us take television, which has hardly any facet in common with film image. From a merely visual point of view the television image or "mosaic" is of low informational content. This mosaic or mesh of translucent points bombards the viewer with a structure that is sculptural, contoured, and tactile. The mosaic of this image is two-dimensional,

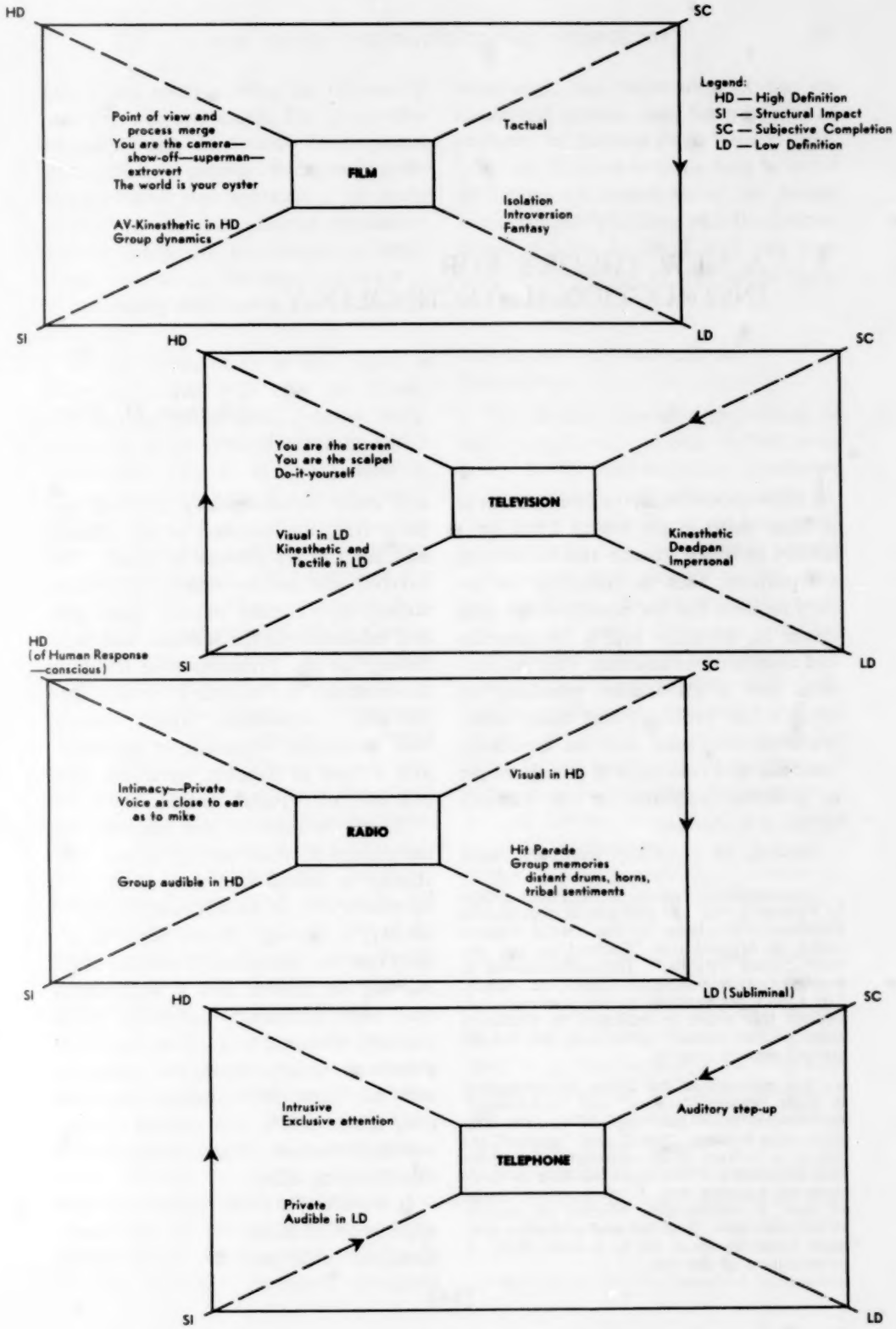
and whether in respect to its low definition, retinal impression, or its high tactility, the television image elicits a very strong participant response from the viewer. The viewer has to be *with it*. He cannot just be *in front of* it. And, in evoking such total participation from us in following *process* or lines of force, television is the "coolest" of media. It ends the era of consumer values and drives us towards "do-it-yourself" values.

Many people are taken aback to hear that print is in high degree a passive consumer medium. But so it was in comparison with manuscript. For the low definition manuscript had to be read aloud slowly; the reader had to "dig it." A low definition form like ordinary speech operates on many levels at once, and manuscripts were close to speech in offering a multi-leveled discourse to the reader. But print being of high visual definition did not exact the degree of participation that the manuscript did and does. Print could be read fast on one level and silently, and with much fantasy and day-dreaming in the subjective completion.

Concerning the media hypotheses which follow, Dr. McLuhan said their "over-all suggestion is that the new media are tending towards the complexity of actual speech (the globe a single electronic drum or computer since the telegraph) whereas media-like writing and printing had much of the specialist simplicity of mechanical form."

TESTABLE HYPOTHESES

1. That SI is incomplete, insofar as the human senses are concerned, in all media except speech.
2. That SC tends to occur for those senses omitted in SI.
3. That LD of sense image in SI results in corresponding intensity of SC for that particular image. (For instance, LD, in causing much effort of completion in telephone and TV, greatly weakens the visual fill-in for telephone and the tactual-kinesthetic fill-in for TV.)
4. That HD of program materials in an LD medium makes a frustrating experience for the perceiver.
5. That the SI of a new medium alters both the SI and SC of the old media.
6. That a medium within a medium creates a fantasy situation, for instance, in writing and printing where speech is held within visual codes. Is this because the perceiver can remain uncommitted on the frontier between two modes?
7. That a new medium (like film) tends to break up older media SI, for example, to break speech out of the printed visual code. (New Castle experiment)
8. That the SR (stimulus response) delay between SI and SC is a "moment" of "play" and "translation" and teachability.
9. That this moment between media and between modes naturally becomes a dominant experience in multi-media culture.


HD
SC
Legend:
HD — High Definition
SI — Structural Impact
SC — Subjective Completion
LD — Low Definition
Point of view and process merge
You are the camera—show-off—superman—extrovert
The world is your oyster
AV-Kinesthetic in HD
Group dynamics
FILM
Tactual
Isolation
Introversion
Fantasy
SI
LD
HD
SC
You are the screen
You are the scalpel
Do-it-yourself
TELEVISION
Visual in LD
Kinesthetic and Tactile in LD
Kinesthetic
Deadpan
Impersonal
SI
LD
HD (of Human Response—conscious)
SC
Intimacy—Private
Voice as close to ear as to mike
RADIO
Visual in HD
Group audible in HD
Hit Parade
Group memories
distant drums, horns, tribal sentiments
SI
LD (Subliminal)
HD
SC
Intrusive
Exclusive attention
TELEPHONE
Auditory step-up
Private
Audible in LD
SI
LD

A NEW THEORY FOR INSTRUCTIONAL TECHNOLOGY

James D. Finn

TECHNOLOGY[1] RELATES to education in at least three major ways. First, in a society in which science and technology are primary, such as America, the society requires that the educational system insure an adequate supply of scientists and associated technicians. This requirement sets a curriculum problem, an organization problem, and many other problems associated with the screening, selection, and education of young people as potential additions to the nation's technical manpower.

Second, as a society becomes more and more technologically oriented and controlled, the question of the general education of all citizens is raised. The survival and management of the whole society theoretically require more general education in the sciences and technology for all. Pressures arise for more mathematics and science to be taught to the entire population. Again, curriculum problems, organization problems, and a host of nagging, persistent general education problems arise.

Third, because of the tendency for technology to have no limits and constantly to extend into new areas, it is inevitable that, in an advanced technical society, technology should begin to extend into the instructional process itself. As will be shown, this is particularly true when education has been, for a century or more, one of the areas of American society which has walled itself off from technological advances and, consequently, has created a technological vacuum. That vacuum is now rapidly being filled.

It is with this third relationship—the application of technology to the educational, or to be more precise, to the in-

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This condensed version of Dr. Finn's article in Volume 8, No. 1 of this journal appeared in the June 1960 issue of *Phi Delta Kappan* under its original title "Technology and the Instructional Process." The condensation is reprinted with permission from the editor. Dr. Finn's presentation to the seminar went beyond this paper as indicated in Section I page 7. For author's affiliation, see list of participants on page 4.

[1] For purposes of this paper, no distinction is made between "science" and "technology" or between "pure" and "applied" science. The distinction between "basic" and "applied" research is perhaps more meaningful, but these two activities are still regarded here as positions on a continuum. From a societal point of view, it matters little whether the society is hit with new ideas or new processes that stem from the ideas, or, as is more likely, a combination of the two.

structional process—that the balance of this paper is concerned. The three relationships just discussed—development of technicians, general education in technology, and the application of technology to the instructional process—cannot eventually be completely separated. However, the third relationship is sufficiently different to merit thorough analysis.

Again for purposes of this paper, a finer distinction will now be drawn. Within the educational process itself, there are three general areas in which technology can or is being applied. These are: (1) general administration, (2) testing, and (3) instruction. The uses of technical management systems, modern equipment, etc., represent the fairly obvious applications to the field of general administration. While it probably can easily be shown that this area of management is, taken as a whole, two or three decades behind its counterpart in industry, the problems associated with technology and school management are not as difficult as some of the others and will not, at this time, be considered. This is not to say that administration is not highly interrelated with the other two areas of testing and instruction, but the position can be taken that the problems arising from the latter two should guide the technical solutions in administration, not the other way around.

The second category, testing, is in many respects the most highly developed technology at present existing in American education. This is true both from a machine and from a systems standpoint. Further, the close relationships between psychological, achievement, and other types of testing and the instructional process are so well defined as to need no comment. However, with some exceptions, the technology of the instructional process can, for purposes of analysis, be isolated from testing. This arbitrary decision is made here in order to further the remainder of the discussion. We are left, then, with the instructional process by itself and can now turn to the impact of technology upon that process.

Development of Instructional Technology

The development of a technology of the instructional process is relatively new. In the pre-industrial phases of both education and industry, while industry was principally at the handwork, artisan level, the instructional process relied upon such devices as the slate, the hornbook, the blackboard, chalk, and limited single textbooks with few illustrations. Although attention will be confined principally to some of the symbols of technology—equipment and machines—it should be emphasized that other factors were in the same state. In the area of organization, for example, it is well known that the graded school is a late development.

We note the famous changes in industry at the beginning of the 19th century —the invention of a group of related machines for power, spinning, weaving, etc.—which made possible the factory system. Based on the work of Toynbee the elder, the term "Industrial Revolution" is applied to this period.[2] In education, however, the same revolution did *not* occur and instructional technology (with some exceptions here and there) remained at the pre-industrial level. During the last quarter of the century, there was some indication of in-

[2] Now called the First Industrial Revolution.

cipient change. Oliver notes that an exhibit from an American school "with maps, charts, textbooks and other equipment" won admiration at the International Exposition in Vienna in 1873. He adds that the American school display at Paris in 1878 was even more outstanding.[3] Significantly, Oliver's last mention of international attention to American instructional technology was at Melbourne in 1880.

By 1900 industry had, in contrast, established factories and was moving into assembly line operations; had begun to apply, in a crude way, research and development concepts; had introduced the beginnings of modern management; and had developed a sophisticated financial system. Developments had reached such a state that the perceptive Henry Adams, true prophet and seer of technology, foretold the coming of the Age of the Atom and the problems it would bring. In the years to 1950, aided by the acceleration of two wars, technology burgeoned and developed, piled machine upon machine, system upon system, added fantastically to its power resources, and invented the method of invention. Technology transformed American society, philosophy, and art.

During the period from 1900 to 1950, however, technology only washed lightly upon the shores of instruction. In this same time span, when high speed printing techniques, radio, sound motion pictures, television, and other pieces of communication technology were invented, developed, and exploited, American education failed to apply these devices in quantity to the instructional process and, of course, failed to develop the appropriate technological systems necessary for this application. There were always rumblings, to be sure, as evidenced by the statement attributed to Edison in 1916 that the motion picture would replace the teacher. However, looked at from the vantage point of 1960, laboratories, project methods, libraries, and minute arrangements for audiovisual materials—the provisions to 1950 constituted what was still a pre-industrial technology for instruction.

By 1950, industry had entered what may be called the pre-automation period, which heralded the beginning of a movement toward true automation. Much of the basic work on computers and other control mechanisms had been done. At this time also, mechanical systems of transporting work goods between machines had integrated some production lines into a system called "Detroit automation." The period of true automation was dawning, and I have arbitrarily set 1955 as the date at which this electronic-mechanical-systems analysis procedure began to be significantly applied. It is no accident that man began to push toward space at about the same time.

By 1950, American education had the potentiality (to carry on with the analogy) of a mass production technology. The hardware—projectors, recorders, television—and the materials were present. The systems concepts—saturation with audiovisual materials at the point of an instructional problem, for example, a concept derived from the military experience of World War II—were developed and known in a few audiovisual circles. A certain amount of incentive and public acceptance, also derived from World War II experience, could be drawn upon. The cake of custom, however, proved to be too tough. The mass

[3] Oliver, J. W. *The History of American Technology*. New York: Ronald Press, 1956. p. 298-99.

production stage, at least 100 years behind industry, was not entered except here and there on isolated little islands.

It was at this point, approximately in 1955, that the god came out of the machine in the form of the Ford Foundation. Dr. Alvin C. Eurich (and a little later, his associate, Dr. Alexander J. Stoddard) gave the instructional processes of American education a sharp push into mass production technology. The time was ripe. There was a shortage of teachers; education and educationists were under fire from all sides; Neo-Technocracy was turning its attention to education; the race with Russia was underway; the natives were restless indeed.

There are several interesting facets to this shove into mass instructional technology. First, television, both closed-circuit and broadcast, was chosen as the prime hardware. This was due, I think, to the unconsciously assumed basic concept of *mass production,* usually stated in terms of a shortage of teachers, large classes, and quality instruction. Second, the Ford impetus made provision, for the first time, for a technology of systems to go along with the hardware. Stoddard's own work in designing the school of tomorrow (26) and the work of Trump and his associates in drawing the instructional images of the future for the American secondary school (28) are, essentially, proposed systems.

Third, the Ford group made use of technology in creating the impetus in the first place. The technology of social psychology and public relations was drawn upon; educational decision-makers were the prime targets, and the means used, including high-priced public relations counsel, were the best available. This accounts for the fact that the teaching profession in general and audiovisual specialists in particular—the latter are really the only technologists of the profession—were for the most part left out of this move into technology.

Instead, the Foundation went to administrators and board members and influential opinion makers of all types. Organizations were approached or created: the National Educational Television and Radio Center (now, I believe, under the administration of the Learning Resources Institute), the revitalized National Association of Educational Broadcasters, the Educational Facilities Laboratories, Inc., and others. As a sign of this policy to short-circuit the profession, it is significant that, except for a small grant to promote a seminar or two, the Department of Audiovisual Instruction of the National Education Association was left out of the largesse.

The Ford people assumed, I think, that if the cake of custom was to be broken the priesthood was not the agency to break it. This may mean, in part and as far as audiovisual and curriculum people are concerned, that to an outsider their technological orientation is at the level of the water wheel and the handloom, not the computer and the rocket. It is something to think about. On the other hand, it may also mean in part that the Ford Foundation is merely another instrument of Neo-Technocracy and that these actions forecast even more loss of control of education by the existing pre-technological profession.

Impact of Present Trends

With this background of development painted in, we can now come to grips with the impact of the present technology. If we consider education as a societal universe, what happens when

we introduce energy into that universe suddenly and on a large scale? That is apparently what is happening.

Two general effects can be predicted by basing out thinking on two analogous concepts. If the concept of entropy holds good in this connection, *the educational system will become more highly organized and less random in nature* (negative entropy will increase); if the laws of social change first stated by William G. Sumner and William F. Ogburn apply, the introduction of a system of technology into the culture will cause *distortions, stresses, and non-predictable effects to increase until a crisis is reached and the culture becomes much different.* Two historical events serve as examples, one taken from Mumford (the introduction of the clock to regulate the habits of Monks)[4] and one from Muller (the invention of writing in Egypt for the purpose of keeping accounts).[5] Both changed the world several times over. The effects of neither were, of course, predictable.

What, then, are the present trends? If you don't count the continuous, grinding, sweating struggle carried on by audiovisual specialists, dealers, manufacturers, and producers to introduce, one item at a time, film libraries, projectors, recorders, etc., into the educational system in the slow process of conversion from a pre-industrial technology, two major trends can be identified. These two trends, at the moment, lead in opposite directions.

The first is the trend toward a mass instructional technology and is governed by machines and systems suitable for that purpose. Foremost, of course, is television, of which there are four instructional types: (1) broadcast on an educational channel, (2) broadcast on a commercial channel, (3) closed-circuit of the Hagerstown-Penn State type in which live instructors are used either to supplement instruction or to provide direct instruction exclusive of classroom teachers, and (4) the Compton type in which filmed lectures are distributed via the closed-circuit medium as replacement for classroom teachers. In all cases, the desire is to reach more students with fewer teachers or to obtain "quality" instruction.

Mass instruction technology in another form includes, of course, the massed film systems. The prime example is the EBF series in physics and chemistry, amounting to over 300 half-hour motion pictures intended to be used where there are no science teachers, where there are teachers not considered qualified, as audiovisual aids to more qualified teachers, and with very large groups of students. These films, of course, may theoretically be used over television. The exploitation of the overhead transparency projector is another example of mass instructional technology as shown in the Newton, Massachusetts experiment in English and grammar and composition.

In opposition to this trend of mass instruction is a growing technology for individual instruction. This trend is the audiovisual wave of the future (for the moment). The most dramatic development here is that class of systems and instruments known as teaching machines. Actually, I would class all teaching equipment designed for individual or near-individual operation as being in the

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[4] Mumford, Lewis. *The Human Prospect.* Boston: The Beacon Press, 1955, p. 3-9.

[5] Muller, Herbert J. *The Uses of the Past.* New York: Oxford University Press, 1959, p. 48.

category of teaching machines.[6] At present, then, there are approximately five types, listed here on an ascending scale of sophistication: (1) individual reading papers and similar devices, (2) individual viewing and listening equipment for existing slides, filmstrips, motion pictures, and recordings, (3) language laboratories of all types, (4) specifically programmed printed materials such as scrambled textbooks and the Lumsdaine notebook, and (5) true teaching machines of the Skinner or Pressey type containing carefully worked out verbal or pictorial programs with various ingenious mechanical or electronic arrangements to test student reaction and inform him of his progress, errors, etc.

Extrapolation I

These two major trends toward technologies of mass and of individual instruction are not science fiction; they are with us now. Assessment of this impact is our most pressing and difficult problem. It does not take much of a crystal ball to see that a combination of these two technologies is the next immediate step. For example, let us take Maurice Mitchell's new series for his chemistry course on 150 plus films. Let us further assume that Mr. Mitchell makes a deal with the Rheem Califone Corporation to program their teaching machine with material to go along with the chemistry films. (Mr. Eurich might have to put up the money for the initial effort). Let us continue by saying we will project the films hourly on the Compton College closed-circuit television film distribution system and place the machines in proper cubbyholes for Compton College students to work at specified times. We could get, almost immediately, to what can be called *total educational automation.*

Or, in another context, let us suppose that the new Ford creation, the Learning Resources Institute, initiates another Continental Classroom in mathematics over national broadcast television; and that the new audiovisual teaching machines now being developed are programmed to relate to this new series; and that these machines are placed by the foundation in every public library in America; and that, at the conclusion of the instructional period, students report to designated centers where the Educational Testing Service examines them and certifies them to the colleges of their choice. Think, for a moment, about that one. It is now possible not only to eliminate the teachers but the school system.[7]

These may be considered extreme applications, but such applications, at least experimentally, are inevitable. In fact, one such study, testing the combination of these two technologies, is now underway. The point is that both the mass instruction systems and the technology of individual instruction—teaching machines—are getting terrific momentum. These technologies are going to hit education with a million-pound thrust. What will be the effect upon our educational society? What is the role of the teacher, the audiovisual specialist, the curriculum director? *Quo vadis* the curriculum

[6] Preferred terms in some quarters are "self-instructional" and "auto-instructional" devices.

[7] *Time* magazine had some fun lifting this sentence out of context. See *Time* March 14, 1959, p. 68. *Time* also said: "Finn offered one caveat: this awesome equipment must not fall into the hands of any one private institution, e.g., the Ford Foundation. Said he, 'The American people don't elect representatives to the Ford Foundation.' "

itself? This last question is particularly pertinent if the medium or image governs the message, as McLuhan maintains.

Extrapolation II

Technology never sits still. The extrapolations given in the last section are immediate. What of those that can be made for a time slightly farther into the future? I see several developments. First, it is reasonable to expect that programming for teaching machines will move from the verbal-Socratic-Skinner type to the audiovisual-branching type. That is, the machines will present conceptual content based upon student pretests, using films, slides, filmstrips, tapes, and/or videotape as the medium. The presentation sequences will be longer and the student will be given an opportunity to select additional sequences for further explanation if the machine, through testing, informs him that he needs it. Records, of course, will be maintained instantaneously by miniaturized computers.

Secondly, the work in England of Ashby, Pask, and others with teaching machines based on the design concepts of biological computers will affect the technology of the present teaching machine much as transactional psychology affects stimulus-response psychology. Pask has already produced a machine which, in training key punch operators, actually senses the characteristics of the student as he works and automatically adjusts the program of the machine to the student's individual needs. This is a pure transaction, and Pask maintains he can develop such a machine to teach decision-making with present hardware and know-how (18).

A second development of the future begins next fall with the Airborne TV experiment of the Ford Foundation over a city in Indiana. Circling overhead one or more airplanes carrying multiple television transmitters can broadcast signals over much greater distance than conventional tower transmission. The programs will go into several states and, because of the location, into both urban and rural areas and into innumerable heretofore independent school districts. Effects of this on local control of curricula, curriculum planning procedures, images of master teachers, patterns of school organization, etc., have yet to be speculated about, let alone explored. Nothing technical would prevent, by the way, a national network of such aircraft as an addition to our other national means of transmission.

A third predicted development is based on information that it is technically possible, although not yet economically feasible, to produce a motion picture film with characteristics similar to the Polaroid film that is instantaneously developable. What this would do to videotape, to production techniques, and to the possibilities of local production of materials is of great interest to the audiovisual field.[8]

Teacher Control

The fourth development that can be anticipated is the most spectacular. Essentially, it is based on a systems concept. It is theoretically possible now to design an automatic classroom under the control of the teacher. Most of the elements are present or can be designed.

[8] The new thermo-plastic method of image-recording developed by General Electric can do much the same thing.

Such a classroom would have total light and air control, automatic projection and television systems, technical provision for the best possible discussion environments, display situations, etc., which could be changed at will. By planned programming, the classroom could be made to function for major presentations, small group discussions, individual work at teaching machines, creative periods, and the like. As we said, all of this *could be* under the control of the teacher. The classroom then would become the teaching machine. Adrian TerLouw at Eastman Kodak has done some work in this area and it is, of course, implied in the provocative article by Simon Ramo which is so often cited in discussions of teaching machines (23). An acquaintance of mine refers to this concept as the "mad scientist" classroom.

Implications

To assess the implications of this current and predicted impact of technology on the instructional process is not easy. As with any such speculation, it is also hazardous. It is, however, a job we must attempt.

We have to start, I think, with the proposition that our educational society is in the position of a backward or underdeveloped culture suddenly assailed by the 20th-century engineer. In addition, reactions in some professional circles to the advent of television are similar to those factory workers of the 19th century who attempted to destroy the machines that were taking over their jobs. In the long run, the machines remained; instructional technology is, no doubt, here to stay. Our problem becomes one, not so much of how to live with it on some kind of feather-bedding basis as how to control it so that the proper objectives of education may be served and the human being remain central in the process.

Certain things are obvious. I think the concept of negative entropy[9] will hold. The thrust and energy of technology will force a greater organization upon us at every point *at which it is applied to instruction.* Such an arrangement as the Airborne experiment will require a tighter and different organization in those five or six states and in those many school districts of the Midwest. The closed-circuit experiment begun a year ago in Anaheim, California, is already, it seems to me, making requirements for organization—of scope and sequence in the curriculum, of the district itself, and of the nature of the television presentations—the rigor of which has never been felt before in Anaheim.

Programming, in its machine, computer, and automation sense, is a matter of extreme organization—the piling up of energy.[10] Most of the devices and systems of the new technology require, one way or another, this type of programming—television, teaching machines, mass films, language laboratories. This means that programmers are needed. Who is to do this? This is essentially, in the old sense, both a curriculum and an audiovisual problem. It is also a social problem. The heartland is programming. He who controls the

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[9] In all the tests I have been able to think of, this concept holds. I am almost convinced that this idea can achieve some status as, forgive me, "Finn's Law."

[10] The role of energy in relation to AV communication theory needs much study. For example, the energy involved in the negative entropy concept should be examined in much the same way that Cottrell studied energy in general in *Energy and Society.*

programming heartland controls the educational system. Will it be a foundation, a committee of scientists, textbook publishers and film producers, the NEA, the school superintendent, the board of education, the students, or the general public?

Too, how many of us will go overboard and sink with the old concepts that will be absorbed or outmoded and tossed to the sharks by the new technology? Take the concept of instructional materials which some curriculum specialists love so well and which caused quite a controversy in DAVI circles a few years ago. The fight was futile, as is the love. The concept of programming and the systems and systems analysis it implies completely absorbs the idea of materials. Instructional materials becomes an outmoded, atomistic, pre-technological concept useful mainly to the historians of education.[11]

The concept of audiovisual education may accompany instructional materials down the drain, or it may not, depending on whether or not it can be redefined acceptably.[12] The Skinner and Pressey type teaching machines and their descendants are, for example, primarily verbal devices, and yet their management and programming as technical electronic devices belong somewhere. At a practical level, within a school situation, someone is going to have to worry about them. It is my contention that the audiovisual field is in the easiest position to help integrate these mechanisms properly into the instructional process. They are not primarily audiovisual; they are primarily technological. The AV field, I think, must now suddenly grow up. We, the audiovisual specialists, are, of all educational personnel, the closest to technology now; we have, I think, to become specialists in *learning technology*—and that's how I would redefine audiovisual education.

What of the curriculum people? Their work is just beginning. It can become infinitely more rigorous and at the same time more satisfying. I suspect some of the emotional Rousseauians will have to get out of the curriculum business. The rest can step in and face this problem of programming a learning technology in human terms and find great excitement and reward. The profession as a whole must be made to sense this powerful movement to instructional technology and be made ready to seize the great opportunity it offers to make *all* teachers highly professional.

The Philosophy of Adventure

In closing, I should like to quote Whitehead, who said that it is the business of the future to be dangerous. Technology certainly has made this aphorism into the outstanding fact of our time. Technology is now making the future of instruction capricious and hazardous. But in doing so it has presented us with more opportunity and more choices than ever before. If the future is an adventure, it is an adventure *because* of technology. The cost of civilization is the fact that we can make wrong choices because of the alternatives technology presents. The reward of civilization is the freedom provided by technology and the opportunity to make the right choices. This cost and this reward we now face with the technology of the in-

[11] McLuhan maintains the same thing about audiovisual aids (14).

[12] Redefinition (and terminology) of the audiovisual field are contemplated as subject of a future special supplement to AV COMMUNICATION REVIEW.

structional process. We *must* look forward to the adventure and not present what Herbert Muller noted as "the curious spectacle of civilized man forever marching with his face turned backward —as no doubt the cave man looked back to the good old days when men were free to roam instead of being stuck in a damn hole in the ground" (p. 65). The "good old days" are gone; approached with intelligence and zest, the days of the future will be better.

References

These references are highly selective. The emphasis has been placed on teaching machines because it is assumed that most readers are familiar with the basic audiovisual literature and with the large and growing literature on educational television. Enough of the latter has been included to provide both a sample and a working base.

1. *Automated Teaching Bulletin*, Vol. 1, No. 1; September 1959. South Gate, California: Rheem Califone Corporation.
2. Bissex, Henry S. *For Instance Number 1*. Holyoke, Massachusetts: The Tecnifax Corporation, 1958.
3. Burns, John L. *Communications and Education*. Radio Corporation of America, Camden, New Jersey, 1958 (Reprint of a speech delivered before the National School Boards Association, 1958).
4. Corrigan, Robert E. *Automated Teaching Methods: A Solution to Our Educational Problems*. Speech published by the Rheem Califone Corporation, South Gate, California; October 1959.
5. Earnest, Ernest. "Must the TV Technicians Take Over?" *American Association of University Professors Bulletin* 44: 3, 582-88; September 1958.
6. Eurich, Alvin C. "Better Instruction with Fewer Teachers." *Current Issues in Higher Education, 1956*. Washington, D. C.: Association for Higher Education, NEA. p. 10-16.
7. Finn, James D. "Automation and Education: I. General Aspects." *AV Communication Review* 5: 343-60; Winter 1957.
8. Finn, James D. "Automation and Education: II. Automatizing the Classroom—Background of the Effort." *AV Communication Review* 5: 451-67; Spring 1957.
9. Finn, James D. "From Slate to Automation." *Audiovisual Instruction* 4: 84-85, 100-01; March 1959.
10. Finn, James D. "A Look at the Future of AV Communication." *AV Communication Review* 3: 244-56; Fall 1955.
11. Galanter, Eugene, editor. *Automatic Teaching: The State of the Art*. New York: John Wiley and Son, 1959.
12. Henning, Gordon. *Meeting the Teacher Shortage*. Paper published by the Technical Military Planning Operation, General Electric Company, Santa Barbara, California; February 1957.
13. Lumsdaine, A. A. "Teaching Machines and Self-Instructional Materials." *AV Communication Review* 7: 163-81; Summer 1959.
14. McLuhan, Marshall. "What Fundamental Changes Are Foreshadowed in the Prevailing Patterns of Educational Organization and Methods of Instruction by the Revolution in Electronics?" *Current Issues in Higher Education, 1959*. Washington, D. C.: Association for Higher Education, NEA. p. 176-82.
15. Miller, Neal, and others. *Graphic Communication and the Crisis in Education*. Washington, D. C.: Department of Audiovisual Instruction, NEA (Published as Vol. 5, No. 3 of *AV Communication Review*), 1957.
16. Mitchell, Maurice B. *Education—A New Era Begins*. Speech published by the Encyclopaedia Britannica Films, Chicago, Illinois; May 1958.
17. National Education Association, De-

partment of Audiovisual Instruction. *Television in Instruction: An Appraisal.* Washington, D. C.: the Department, 1958.

18. Pask, Gordon. "Electronic Keyboard Teaching Machines." *Education and Commerce* 24: 16-26; July 1958.
19. Pask, Gordon. "The Teaching Machine." *The Overseas Engineer;* February 1959. p. 231-32.
20. Pask, Gordon. "A Teaching Machine for Radar Training." *Automation Progress;* May 1957. p. 214-17.
21. Pask, Gordon. "Tomorrow's Control Systems Can Learn from Experience." *Automation Progress;* February 1959. p. 44-46, 57.
22. Porter, D. A. "A Critical Review of a Portion of the Literature on Teaching Devices." *Harvard Educational Review* 26: 126-47; Spring 1957.
23. Ramo, Simon. "A New Technique of Education." *Engineering and Science* 21: 17-22; Spring 1957.
24. Raymond, R. C. *The Need for Labor-Saving Machinery in Education.* Speech published by the Technical Military Planning Operation, General Electric Company, Santa Barbara, California; February 1957.
25. Skinner, B. F. "Teaching Machines." *Science* 128: 3330, 969-77; October 24, 1958.
26. Stoddard, Alexander J. *Schools for Tomorrow.* New York: The Fund for the Advancement of Education, 1957.
27. *Teaching by Television.* New York: The Ford Foundation, 1959.
28. Trump, J. Lloyd, *Images of the Future.* Washington, D. C.: National Association of Secondary-School Principals, NEA, 1959. 48 p.

SECTION VI

Retrospect and Prospect

FRED F. HARCLEROAD

THIS PRESENT ERA marks a crucial period in the ages-long fight between individual freedom and authoritarian control of individuals. The pendulum constantly swings between emphasis on the needs of the community and emphasis on the importance and needs of the individual. The present struggle with the Communistic Empire places a premium on maximum development of each individual's potential. The United States has been one of the great bulwarks of individualism and freedom for almost two centuries. As such our society has required children to attend school and to partake of a locally-structured or state-structured curriculum. State texts are often prescribed and state examinations given over state courses of study. Thus we have the "captive" mass audience of the public school and the need to reach and teach each individual person. We encourage free expression and free enterprise in contrast to the thought control and controlled economy of the completely authoritarian state.

All of the problems of education in our democracy are inherent in the education of audiovisual communication specialists. We need to provide a strong liberal education as a base for specialized professional study and work. We need to provide a professional curriculum which will serve as a base for the specialist to continue his own education, adapting to the constant technological and social change of our times. We need to increase our supply of specialized personnel in a time of limited manpower resources. The Russian Empire is educating specialists of all types for "export" to underdeveloped countries. We must do the same. These, and similar basic problems, face all of education.

Education of audiovisual communication specialists must be developed in this total background, and the first seminar's emphasis on the social sciences reflects it. A series of national seminars must now be held to follow up these beginning discussions. Further work is vital on these major topics:

1. A theoretical and functional definition of the audiovisual communication specialist. Is he a "change agent" as described by L. C. Larson and Anna Hyer,[1] or a "learning technologist who is essentially an innovator," as described by James Finn? [2] Or, do these mean essentially the same thing?

2. A definitive analysis of appropriate scientific and historical content from various supporting subject matter fields

3. Organization of this content into a planned, sequential curriculum with the flexibility necessary to provide various levels and types of specialization

4. A justifiable value-system for the profession which should culminate in an enforced code of ethical behavior.

Several times in the seminar discussions, Carlton Erickson proposed further seminars and also a series of yearbooks. They should go forward on two fronts simultaneously, the theoretical and the practical or functional. The 1960 seminar included both aspects because persons with both interests attended. The profession will be strong in the future if both functional and theoretical emphases move forward together.

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[1] Hyer, Anna L. "Setting the Proper Keystone." (Editorial) *Audiovisual Instruction*, Vol. IV, No. 8; November 1959. p. 284.

[2] Finn, James D. "Assignment: DAVI, Personnel: 1970." *Educational Screen and Audiovisual Guide*, August 1960. p. 430-31.

RESEARCH PAPERS REQUESTED

The Research Committee of the Department of Audiovisual Instruction extends this invitation to anyone desiring to present a paper during the DAVI National Convention in Miami Beach, Florida, April 24-28. These research papers should be in written form and should require a presentation time of from 20 to 30 minutes. They may deal with any phase of the audiovisual field including television and teaching machines. Papers on Title VII projects are invited. A 600- to 800-word abstract (or the complete paper) must be submitted by February 1. Interested persons are asked to contact John Moldstad as soon as possible. Write to Dr. Moldstad at the Audiovisual Center, Indiana University, Bloomington, Indiana.